

## **Water Quality Petition**

### **Name and Address of Petitioner**

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### **The Action of the Regional Water Board Being Petitioned**

We are petitioning the California Water Quality Board to overturn Order NO. R1-2010-0033 (NPDES NO. CA0005894; WDID No. 1B770050HUM) WASTE DISCHARGE REQUIREMENTS FOR FRESHWATER TISSUE COMPANY, SAMOA PULP MILL

And

CEASE AND DESIST ORDER NO. R1-2010-0039

Copies are included.

### **The date of the action of the Regional Water Board**

The North Coast Regional Water Quality Control Board approved these orders on July 15, 2010

### **A Statement of Why the Action was Inappropriate or Improper**

The action was inappropriate, because it fails to protect the environment and those of us who live near the mill. The Cease and Desist Order sets up a schedule which does not bring the mill into compliance with the Clean Water Act until January 23, 2014 when the wastewater treatment plant goes into operation.

This mill has a history of violations and the current water permit will allow it to continue to pollute until 2014. This will subject us who live here to toxic chemicals for over 3 years. It will allow them to continue to endanger the environment, wildlife and the health of the Pacific Ocean.

In a letter to the North Coast Regional Water Quality Control Board dated July 9, 2010 the State Water Resources Control Board Office of Enforcement (OE) said, "As you are no doubt aware, the Samoa Pulp Mill (Mill) has a long history of violations stemming from the facility's inability to meet applicable effluent limitations due to its lack of secondary treatment. Since being formed in July of 2006, OE has been involved in two administrative civil liability actions against the prior owners of the Samoa Pulp Mill, Evergreen Pulp Inc. (Evergreen). Those efforts resulted in the Regional Water Board imposing over \$900,000 in liability against Evergreen....To date the Regional Water Board has not been able to collect any portion of the liability imposed against Evergreen."

On April 23, 2009 the Water Permit for the Samoa Pulp Mill (Evergreen Pulp Inc.) was revoked. They were fined for a series of Effluent limitation Exceedances (March 1, 2005 through December 31, 2007). The fine could have been as high as \$59,297,999,000), but a settlement amount was decided on of \$463,000. Another list of violations for January 1, 2008 through December 31, 2008 resulted in a fine of \$453,000. (Administrative Civil Liability Complaint No. R1-2009-0012) To our knowledge, nothing has changed at the plant and if it starts operating, these same violations could be expected except now the owners of the mill would be protected from most fines by the Cease and Desist order. Unfortunately, those of us who live near the mill and the environment would not be protected.

A letter from the United States Environmental Protection Agency Region IX dated June 24, 2010 states; "The existing facility has been operated by previous owners in a state of noncompliance with Clean Water Act ("CWA") requirements for many years. We are concerned that the new owner Freshwater Tissue Company, has decided to reopen and operate the existing facility, which cannot achieve immediate compliance with effluent limitations that all existing facilities must meet in order to discharge under the NPDES program. Moreover, Freshwater Tissue has offered no clear assurances that actions necessary to comply with the new permit as soon as possible are being taken....The fact sheet states that the RPA shows reasonable potential for the discharge to exceed Ocean Plan Table B objectives for HCH, TCDD equivalents, and total DDT." (RPA=Reasonable Potential Analysis)

The Cease and Desist Order concerning the mill's ability to meet standards says: "Based on an analysis of effluent monitoring data from 2005 through 2008, the discharge from the Facility cannot comply with: final effluent limitations in WDR Order No. R1-2010-0033 for five-day biochemical oxygen demand (BODs) in section A.1 during production of bleached pulp, effluent limitations for BODs and total suspended solids (TSS) in section A.2 of the Permit during production of unbleached pulp: and effluent limitations for settleable solids and turbidity in sections A.3 of the Permit for the discharge of solids removed from the water treatment plant." (p.2)

In the Water Discharge permit there is a long list of chemicals that the mill must monitor. If these tests show dangerous levels of these chemicals, the Cease and Desist is not triggered. It appears that they are given permission to release these chemicals into the Ocean until their wastewater treatment plant is completed in 2014. "The RPA showed reasonable potential" for HCH, TCDD equivalents, aldrin, and total DDT;"(Water Permit p. F-21) The results of reasonable potential analysis reveal a long list of chemicals (Water Permit p. F-21-F-24) that may show up in discharges into the Ocean. Many of these are listed by the State of California as causes of cancer and birth defects (prop. 65) for example copper, cyanide, lead, zinc, chromium, toluene, chloroform, You don't need to be a

scientist to know that these chemicals pose a danger to people, animals, and the environment. If they are detected in the wastewater during tests, these chemicals will already have been released into the environment. Violations of release of excess amounts of these chemicals won't trigger the Cease of Desist Order.

Also of concern is that the Samoa pulp mill site is a legally mandated toxic clean up site. The wells are full of toxic chemicals many of which are above the reporting level. The California Regional Water Quality Control Board in a letter dated July 19, 2010 said, "The portion of the Site known as Area of Interest (AOI)-8 is also known as the VOC Area Southeast. This area has been known to be a discharge threat to Humboldt Bay for more than five years because of its close proximity to Humboldt Bay and the fact that lateral groundwater flow direction is toward Humboldt Bay. The contaminants of concern (COCs) in AOI-8 include a host of chlorinated volatile organic compounds (CVOCs). The recent groundwater monitoring effort in compliance with Regional Water Board Monitoring and Reporting Program (MRP) No. R1-2010-0023 continues to show the presence of CVOCs including; tetrachloroethene (PCE), trichloroethene (TCE), and Cis-1,2-dichloroethene (Cis-1,2-DCE)."..."Clearly, the shallow groundwater WQOs is exceeded for the identified CVOCs. In addition to the CVOCs, dissolved metals were measured and some of these levels also exceeded WQOs in both shallow and deeper groundwater." The results of the 2010 tests of the groundwater in the wells are on Geotracker. Chemicals that are above the reporting levels include: arsenic, chromium, manganese, chloroform, nickel, total dissolved solids, cis-1,2-Dichloroethene, Tetrachloroethene (PCE), Trichloroethene TCE, hexavalent chromium, 1,1-Dichloroethane, 1,1,1 Trichloroethane, Trichloroethane (TCE), chloroform, and vinyl chloride. Many of these are known causes of cancer according to the state of California (Proposition 65 list). Clearly these chemicals are a risk for people, animals and the environment. They are located near the outfall pipe that lets the wastewater into the Ocean. Surely consequences of an accident where these chemicals are released into the Pacific Ocean should be considered. It seems unwise to allow this mill to start up when the chemicals from past spills, etc. are still on the mill site.

The hearing was held in Santa Rosa, which is 5 hours away from Eureka. It was very hard for concerned citizens to travel that far. Many people who opposed this permit were unable to come because of the cost or because of health issues. Two people spoke against the permit. No citizens spoke for it. There were a number of letters from the public against the opening of the mill.

In summary, the action of the North Coast Regional Water Quality Board was inappropriate, because they ignored dangers to people, animals especially sea life and the environment. The needs of Freshwater Tissue Co. were given precedence over the needs and concerns of the people who live near the mill and the environment.

**How the Petitioner is Aggrieved**

We are aggrieved, because we live close to this mill. Our quality of life as well as our health is compromised. We will be the recipients of the mill toxins when we walk on the beach or wade in the ocean. These toxins are in our groundwater according to staff of the North Coast Water Board. What goes into the Ocean will come around into Humboldt Bay. This is where we live. Enclosed is a map of the impacted area of the Samoa Mill that was included in the Health Risk Assessment done in 2006 for the North Coast Regional Air Quality District. Most of us live in the danger area outlined in the map.

**The Action the Petitioner Asks the State Water Board to Take**

We request that the State Water Quality Board overturn the decision of the North Coast Regional Water Quality Board to approve this permit and its accompanying cease and desist order and prevent the Samoa Pulp Mill (Freshwater Tissue Co.) from releasing discharge water into the Pacific Ocean. We request that you protect the environment and the health of the people and animals that live near the mill.

**A Statement of Points and Authorities for Legal Issues Raised in the Petition, Including Citations to Documents or Hearing Transcripts that are Referred to**

Documents that were quoted or mentioned in this petition are all included with our appeal. As far as legal points, this permit and cease and desist order violate the spirit if not the letter of the Clean Water Act. This is not a short-term extension that is being granted to the Freshwater Tissue. It allows them to violate the standards set in the Clean Water Act for well 3 ½ years. This means they will be putting untreated toxic water into the Pacific Ocean for this time. This was not what was intended by the Clean Water Act.

**A Statement that Copies of the Petition have been sent to the Discharger**

Copies of the petition have been sent to Freshwater Tissue Co. and the North Coast Regional Water Quality Board. Postal receipts are enclosed.

**A Statement that all Issues Presented in this Petition were Brought up Before the Regional Water Board.** We brought these issues up before the Water Board acted, but we were only given 3 minutes, therefore we could not bring in the detail presented here. There were approximately 10 letters from the public against the permit. (These were not printed out to be handed out at the July 15 meeting, but were suddenly printed out during the meeting when we complained.)

**An Additional Point**

This Cease and Desist Order has 23 deadlines. It will be very expensive and time consuming to enforce. In other words, it is an enforcement nightmare. There is already a discussion about what will happen when they miss deadlines. In a letter dated July 13, 2010 from Allan Matkins attorney for Freshwater Tissue, he asks

that the following language be added to the Cease and Desist Order. "If for any reason the Discharger is unable to perform any activity or submit any documentation in compliance with the work schedule...that the Regional Water Board grant an extension of the time." In other words, Freshwater is already planning that they may not be able to meet the deadlines in the Cease and Desist Order. The Office of Enforcement of the State Water Board outlined this problem in their letter of July 9, 2010 when they said, "Lastly this Order will require continued diligence and involvement from the Regional Water Board and dedication of limited resources to monitor Freshwater's compliance with the Order. The potential impact that this dedication of limited resources will have on other Regional Water Board priorities should be considered."

*Carol Binder*

## List of Documents

Order NO. R1-2010-0033 WASTE DISCHARGE REQUIREMENTS FOR FRESHWATER TISSUE COMPANY, SAMOA PULP MILL

Cease and Desist Order NO. R1-2010-0039

Letter from the State Water Resources Control Board Office of Enforcement to North Coast Regional Water Quality Control Board dated July 9, 2010

ADMINISTRATIVE CIVIL LIABILITY ORDER NO. R1-2009-0032 for VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS Order No. R1-2004-0047

ORDER NO. R1-2009-0006 NOTICE OF INTENT TO TERMINATE WASTE DISCHARGE REQUIREMENTS for THE EVERGREEN PULP, INC., SAMOA PULP MILL ORDER NO. R1-2004-0047

ADMINISTRATIVE CIVIL LIABILITY COMPLAINT NO. R1-2008-0097 For Violation of Waste Discharge Requirements Order No. R1-2004-0047 In the Matter of Evergreen Pulp Mill Samoa Pulp Mill

Letter from the Environmental Protection Agency Region IX dated June 24, 2010

Letters from David Parson, Engineering Geologist for California Regional Water Quality Control Board dated March 17, 2010, February 17, 2010, July 19, 2010.

Page 5-2 of the Health Risk Assessment dated October 24, 2006 for the North Coast Unified Air Quality Management District. (The entire document has been sent via e-mail to the State Water Board). A hard copy can be sent by request. This document is not on line.

Letter from Allen Matkins Attorney for Freshwater Tissue Co. dated July 13, 2010

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*Draft Report*

# **Evergreen Pulp Human Health Risk Assessment**

Prepared for  
**Evergreen Pulp, Inc.**

October 2006

**CH2MHILL**

2525 Airpark Drive  
Redding, CA 96001

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One TCF Drive, P.O. Box 218  
Samoa, California 95564  
(707) 443-7511

ELECTRONIC MAIL  
CERTIFIED MAIL 7004 2890 0002 0600 0280

October 24, 2006

Mr. Richard Martin, Jr.  
Air Pollution Control Officer  
North Coast Unified AQMD  
2300 Myrtle Avenue  
Eureka, CA 95001

**Subject: Human Health Risk Assessment**

Dear Mr. Martin:

Enclosed is the Human Health Risk Assessment (HHRA) prepared by CH2MHill for Evergreen Pulp, Inc., as required by the Stipulated Order of Abatement approved by the NCUAQMD Hearing Board on January 21, 2006. In accordance with Paragraph 18 of the Stipulated Order of Abatement, Evergreen is required to perform and submit an updated HHRA by August 25, 2006. The NCUAQMD authorized an extension of the deadline to October 24, 2006, due to prior unavoidable delays in collecting and processing required meteorological data and due to the complexities of incorporating the dispersion model AERMOD into the California Air Toxics Hot Spots program.

If you have any questions or require any further information, please call me at (707) 269-7553.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Romero", is written over a circular stamp or seal.

Carol Romero  
Environment and Safety Manager

Enclosure

cc: Simona Altman; Certified Mail 7004 2890 0002 0600 0280  
Al Steer; Certified Mail 7004 2890 0002 0600 0280  
Nancy Diamond, Esq.; Certified Mail 7004 2890 0002 0600 0365  
Kara Christenson, Esq. Certified Mail 7004 2890 0002 0600 0372  
Cynthia Steiner; Certified Mail 7005 1820 0001 1154 0508  
James Ryden; Certified Mail 7005 1820 0001 1154 0515  
George T. Poppic, Jr., Esq.; Certified Mail 7005 1820 0001 1154 0546  
David Cooke, Esq.

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# Acronyms and Abbreviations

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°F	degrees Fahrenheit
µg/L	micrograms per liter
µg/m³	micrograms per cubic meter
BPIP	Building Profile Input Program
CARB	California Air Resources Board
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
Evergreen	Evergreen Pulp, Inc.
ft/s	feet per second
HARP	Hot Spots Analysis and Reporting Program
HHRA	human health risk assessment
ISC	Industrial Source Complex
lb/ADTFP	pounds per air dry ton of finished pulp
MEIR	maximally exposed residential receptor
MEIW	maximally exposed worker receptor
mg/kg-day	milligrams per kilogram per day
mg/L	milligrams per liter
NCASI	National Council for Air and Stream Improvement
NCDC	National Climatic Data Center
NCUAQMD	North Coast Unified Air Quality Management District
NWSO	National Weather Service Office
OEHHA	Office of Environmental Health Hazard Assessment
PMI	point of maximum impact
REL	reference exposure level
TAC	toxic air contaminant
TB 681	Technical Bulletin 681
USGS	U.S. Geological Survey
VOC	volatile organic compound

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## SECTION 1

# Introduction

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Evergreen Pulp, Inc. (Evergreen), operates a kraft pulp mill in Samoa, California, in Humboldt County across Humboldt Bay from Eureka, California. The mill is one of the facilities in Humboldt County that is defined as a *major source* of air pollutants under the Clean Air Act. The mill's air emissions are regulated by federal, state, and local rules and regulations. The applicable regulations are enforced by the North Coast Unified Air Quality Management District (NCUAQMD) through a Clean Air Act Title V Operating Permit.

On January 21, 2006, the NCUAQMD Hearing Board approved a Stipulated Order of Abatement. In accordance with Paragraph 18 of the Stipulated Order of Abatement, Evergreen is required to perform and submit an updated human health risk assessment (HHRA) by August 25, 2006. The NCUAQMD authorized an extension of the deadline to October 24, 2006, because of prior unavoidable delays in collecting and processing required meteorological data and the complexities of incorporating the dispersion model AERMOD into existing modeling formats used to satisfy obligations under the California Air Toxics Hot Spots program.

The HHRA was conducted for Evergreen's maximum hourly and average annual emissions. The HHRA was performed following the latest guidance outlined in the *Air Toxics Hot Spots Program Risk Assessment Guidelines* (Office of Environmental Health Hazard Assessment [OEHHHA], 2003), the U.S. Environmental Protection Agency's (EPA) *Guideline on Air Quality Models* (40 Code of Federal Regulations [CFR], Part 51, Appendix W, November 2005), and the California Air Resources Board's (CARB) *Recommended Interim Risk Management Policy for Inhalation-based Residential Cancer Risk* (CARB, 2003).

The health risk assessment is divided into four basic parts: hazard identification, exposure assessment, dose-response assessment, and risk characterization. This is a standard approach to risk assessments that was proposed by the National Academy of Sciences in 1983.

The hazard identification involves identifying the compounds of concern and determining whether a pollutant is a potential human carcinogen or associated with other types of adverse health effects. This HHRA addressed 40 toxic air contaminants (TAC), as defined by California Health and Safety Code, Section 39655(a), on the Assembly Bill 2588 list for the health risk evaluation. Of the 40 substances, 17 are considered carcinogenic and evaluated for cancer risks. The noncarcinogenic health risks evaluation addressed 38 TACs for chronic impacts and 21 for acute impacts.

The emission rates for the compounds of concern were based on source testing or published emissions factors and were entered into the Hot Spots Analysis and Reporting Program (HARP) for each emission source. For some compounds, the estimated emission rates are very conservative because of a lack of data from similar sources and the compressed

schedule for conducting this HHRA in accordance with the Order<sup>1</sup>. Evergreen intends to further evaluate the emissions data, as described herein, and update this HHRA as appropriate. In combination with HARP inputs, physical parameters for the point and area emission sources were entered into the AERMOD dispersion model to estimate the worst-case dispersion effects applicable to estimating exposures.

The exposure assessment estimates the extent of public exposure to a compound of concern so that the potential human health impact can be evaluated. This assessment involved modeling atmospheric dispersion, identifying exposure routes, identifying exposed populations, and estimating short-term and long-term exposures. Figure 1-1 shows the location of the plant in relation to the nearby population centers. The AERMOD program, along with 5 years of meteorological data from the Woodley Island National Weather Service Office (NWSO), was used to conduct the dispersion modeling. An array of 1,962 receptor grid points and terrain elevations are entered into AERMOD. Building profile information for the major buildings at the mill site was defined to account for building wake and cavity effects.

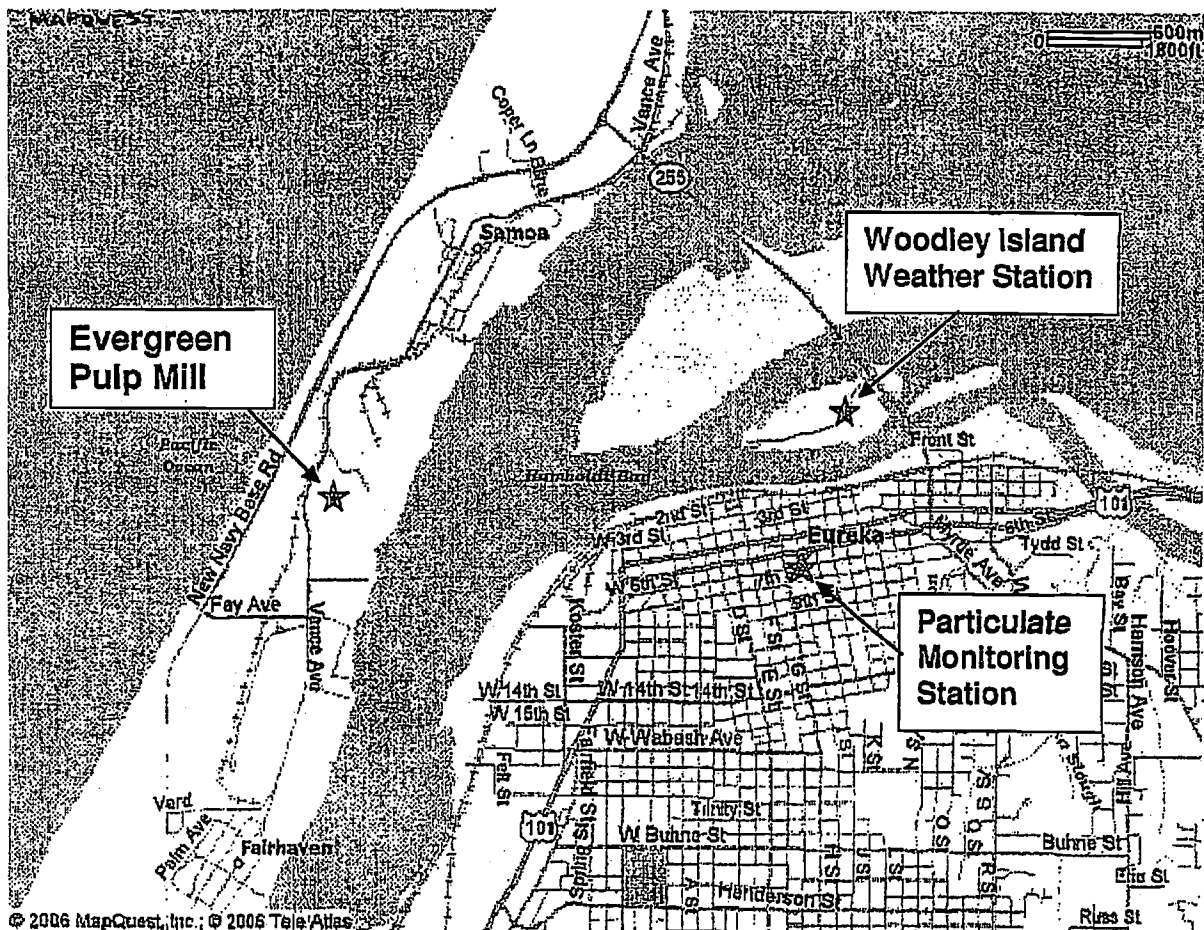


FIGURE 1-1

Location Map of Project Site and Nearby Population Centers

<sup>1</sup> Additional testing by Evergreen and current research by the National Council for Air and Stream Improvement (NCASI) will allow for development of more accurate emissions estimates and updates to this HHRA. The schedule required by the Order will preclude the necessary data refinement for this draft HHRA. Available emissions factors are conservative and some do not reflect actual conditions at the mill.

The use of AERMOD is a departure from the Industrial Source Complex (ISC) dispersion model that HARP is designed to use. However, as directed by NCUAQMD, the AERMOD model (Version 04300) was used for this risk assessment. The output data from AERMOD were processed into a format that could be accepted as input to HARP. The output file represented the highest short-term and average long-term impact over the 5-year period for any emitted compound at every receptor.

The dose-response assessment is the process of characterizing the relationship between exposure to a compound and incidence of adverse health effects in populations. The OEHHA has compiled cancer potency factors for use in HARP risk assessments. For noncarcinogenic effects, the dose-response data developed from animal or human studies are used to define acute or chronic noncancer reference exposure levels (REL). These potency factors and RELs, along with other reference conditions that allow for the calculation of potential health risk, have been incorporated in to the HARP model. The AERMOD modeling results were incorporated into HARP (Version 1.2a, August 2005) to conduct the HHRA analysis.

The final step of a risk assessment is risk characterization. The calculated risks from all pollutants emitted from the facility are combined. Cancer risks from multiple carcinogens are considered additive. For exposure to multiple noncarcinogen pollutants, a hazard index approach is applied for air contaminants affecting the same organ system. This HHRA primarily addresses risk through inhalation.

## SECTION 2

# Hazard Identification

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The sources of hazardous air emissions and emissions control devices are identified in the Title V Operating Permit. This section presents the emission rates and physical source parameters used in the dispersion modeling analysis.

## 2.1 Emission Rates

The estimated emission rates for each emission source are summarized in Appendix A. The emission rates are derived from several types of data: direct measurement in stack gas concentrations, emission factors derived from data for similar facilities, and mass balance or mass transfer approximations. Emissions factors were developed based on the source data and compiled into a database. Emissions estimates are based on the following:

- Source test data and continuous emissions monitoring system data are preferable and are used where available.
- Emissions factors are based on data for similar facilities (i.e., softwood kraft), where available.
- In some cases, emissions factors conservatively use detection limit values, as noted in Appendix A.

When direct-source test or monitoring data were unavailable, emissions factors published in NCASI Technical Bulletin 858 or other applicable references were used in place of measured emission rates.

After the emissions factors were loaded into the database, conservative operating assumptions were developed for generating emissions estimates. The annual average emissions estimates are based on 2005 operating parameters that were artificially scaled up to reflect 350 operating days, as opposed to the actual 305 operating days in 2005. Short-term averages are based on an assumed pulp production rate of 735 air dry short tons per day. This level is approximately the 95<sup>th</sup> percentile of daily pulp production values observed in 2005.

## 2.2 Uncertainty in Emissions Rates

Source-specific regulated pollutants (e.g., sulfur dioxide emissions from the recovery boiler) are tested regularly through continuous emissions monitoring or routine source tests. Therefore, the uncertainty associated with emissions estimates for source-specific and monitored regulated pollutants is relatively low. However, many of the compounds included in the Evergreen emissions inventory for this HHRA have never been tested (e.g., acetaldehyde and acrolein emissions from the pulp dryer or hexavalent chromium emissions from the recovery boiler). Therefore, published emissions factors must be used to estimate emissions. The uncertainty associated with the emissions factors is often high.

Much of the data used in this risk assessment are derived from emissions factors published by NCASI that are based on pooled source test data. In some cases, the number of sources tested is as low as one, and the statistical methods used to generate emissions factors are generally conservative (e.g., detection limit values are used in the average). For example, the hexavalent chromium emissions estimates for Evergreen's lime kiln are based on NCASI data for three lime kilns with wet scrubbers. Two of these three source tests resulted in nondetectable levels of hexavalent chromium. An emissions factor was developed by NCASI using a statistical method to account for the nondetect values.

In addition to the uncertainty inherent in using pooled test data and including detection limits, other site-specific factors can have a significant effect on uncertainty of emissions estimates. The following is provided as an example of site-specific factors that contribute to such uncertainty.

In 1994, NCASI published Technical Bulletin 681 (TB 681), which presents the relationship between white water methanol concentration (in milligrams per liter [mg/L]) and pulp machine methanol emissions (in pounds per air dry ton of finished pulp [lb/ADTFP]). The relationship is presented on Figure 2-1 and is based on data collected from five integrated pulp and paper mills. The data presented in TB 681 are the basis of emissions factors published in NCASI Technical Bulletin 858 and used in this HHRA to estimate emissions, in the absence of source-specific data, for the purpose of assessing health risk.

The white water methanol concentration data from TB 681 span two orders of magnitude from 1.3 mg/L to 311 mg/L. The following equation represents the regression line over these data. The  $R^2$  value of 0.97 suggests a good correlation between methanol white water concentration and methanol air emissions.

$$y = 0.00477x + 0.0953 \quad (1)$$

As seen on Figure 2-1, the methanol concentrations in the white water at Mills K, N, and Q were at least three times (and up to two orders of magnitude) lower than that of Mills G and H. Based on the regression line, a mill with a white water concentration of 0 mg/L would emit 0.095 lb/ADTFP of methanol; however, Mill K emitted approximately half that value.

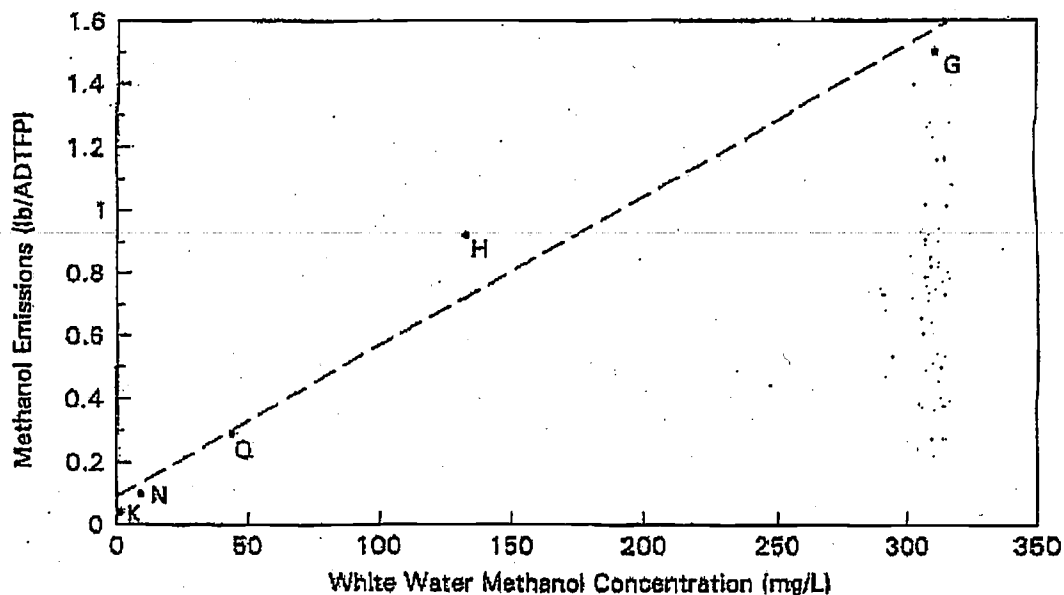


FIGURE 2-1  
Methanol Emissions from Paper Machines/Pulp Dryers  
Source: NCASI TB 681

The volatile organic compound (VOC) emissions estimates used in this HHRA, and presented in NCASI Technical Bulletin 858, are the averages of Mills K and N.

On October 12, 2006, Evergreen collected a sample of white water from the pulp drying machine and sent it to KIFF Analytical, LLC, for VOC analysis by EPA Method 8260B with gas chromatography/mass spectrometry. The sample was processed on October 17, 2006. Table 2-1 presents the results for the detected compounds.

TABLE 2-1  
Analytical Results of Compounds Detected in the Evergreen Pulp Machine White Water  
*Evergreen Pulp Human Health Risk Assessment*

Compound	Measured Concentration (µg/L)	Method Reporting Limit (µg/L)	Analyte Percentage of Total VOC
Methanol	360	50	90.4
Ethanol	8.1	5.0	2.0
Chloroform	1.3	0.50	0.3
Acetone	29	5.0	7.3

Note:

µg/L = micrograms per liter

Methanol concentration measured from the Evergreen white water was 0.36 mg/L, an order of magnitude lower than that of Mill K published in TB 681, which was the lowest reported. Based on the linear relationship established by NCASI, it is reasonable that the Evergreen methanol emissions would be well below those of Mill K. The HHRA uses a

methanol emissions value of  $7.10 \times 10^{-2}$  lb/ADTFP, based on the average of Mills K and N, which operate as bleached kraft mills. This value is significantly greater than the emissions of Mill K ( $5.0 \times 10^{-2}$ ). Because of the concentration of methanol in Evergreen's whitewater, the emissions of methanol from the Evergreen mill would be expected to be significantly lower than those of Mill K. Thus, the estimated methanol emissions rate of  $7.10 \times 10^{-2}$  lb/ADTFP used in this HHRA is conservative.

The linearity seen between white water methanol concentration and methanol emissions is also reasonably expected to apply to other hazardous air pollutant emissions from a paper machine. Of particular interest to this HHRA are acrolein and acetaldehyde emissions from the pulp machine. This HHRA uses emissions rates for acrolein and acetaldehyde that are averages of the emissions rates for Mills K and N, as is the source for the methanol emissions estimate. The study methods were unable to detect acetaldehyde or acrolein in the white water, so no relationship between concentration and emission rate was established. Analysis of the Evergreen white water collected on October 16, 2006, also did not detect acrolein or acetaldehyde. Nonetheless, it is reasonable to conclude that these emissions are likely overestimated, based on the observed behavior of methanol, which is also a VOC.

The above case is one example of the conservative nature and uncertainty of emissions estimates that are based on pooled source data. Additional study is required to refine emissions estimates to minimize uncertainty. NCASI is currently focusing on refinements to its estimates for acetaldehyde and acrolein emissions from pulp and paper facilities<sup>2</sup>.

## 2.3 Source Parameters

The physical stack parameters include the stack height above plant grade, inside diameter of the stack outlet, stack base elevation, and grid coordinates (easting and northing). The physical stack parameters are fixed and do not change under various operating conditions. The exhaust gas characteristics include the actual exhaust gas flow rate, exhaust gas temperature at the stack outlet and exit gas velocity at the stack outlet. The exhaust gas characteristics change as a function of operating condition. Conditions that contribute to higher exit gas velocities or higher exit gas temperatures produce greater plume rise, greater dispersion, and lower air quality impacts. To provide a reasonable estimate of plume dispersion, a median or average actual air flow rate was used. If no flow or temperature data were available, these parameters were estimated based on similarity to other sources or knowledge of the source operating parameters. The source parameters used in the modeling analysis for point sources are summarized in Table 2-2 and those used for area sources are summarized in Table 2-3.

<sup>2</sup>Personal communication with Arun Someshwar/NCASI on October 13, 2006.

TABLE 2-2  
Physical Source Parameters for Point-source Emissions  
Evergreen Pulp Human Health Risk Assessment

Source Description	Source ID	Easting	Northing	Stack Height (feet)	Temperature (°F)	Exit velocity (ft/s)	Stack Diameter (inches)
Second Post-oxygen Washer Seal Tank	17	399366	4517593	90	162	10.7	16
Second Post-oxygen Washer Filtrate Vent	18	399348	4517556	20	129	7.8	14
Noncondensable Gas Incinerator	43	399258	4517623	290	164	0.5	202
Combined Bleach Plant and Second Post-oxygen Hoods	20	399374	4517607	90	139	33.2	47
EOP Seal Tank Vent	22	399384	4517605	90	167	11.2	16
Pulp Dryer	24	399465	4517550	70	140	25.0	48
Smelt Dissolving Tank	33	399251	4517662	207	180	24.6	51
Lime Kiln	35	399215	4517559	75	165	26.6	58
Lime Mud Precoat Filter and Dregs Filter Vacuum Pumps	36	399211	4517560	74	110	20.0	16
Lime Mud Precoat Filter	37	399211	4517560	65	130	100.0	43
Slakers and Causticizing Tanks	39	399295	4517542	23	140	65.6	3
Recovery Boiler	32	399258	4517623	290	322	17.6	202

## Notes:

°F = degrees Fahrenheit

ft/s = feet per second

TABLE 2-3  
Physical Source Parameters for Area Sources  
Evergreen Pulp Human Health Risk Assessment

Source Description	Source ID	Easting	Northing	Release Height (feet)	Temperature (°F)	Radius (feet)
High-density Tanks	13	399355	4517653	72	162	18
High-density Tanks	23	399384	4517636	72	129	18
Lime Mud Tanks	38	399202	4517529	22	164	10
Green Liquor Clarifiers	40	399260	4517504	22	139	33
Green Liquor Surge Tank	41	399261	4517550	40	167	23

## SECTION 3

# Exposure Assessment

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The exposure assessment discusses the modeling input and options used in the modeling analysis to characterize the dispersion environment. The AERMOD model was used to perform the dispersion calculations. The AERMOD model is recommended by EPA for demonstrating compliance with National Ambient Air Quality Standards. The AERMOD dispersion modeling analysis used the following options and features:

- Regulatory default options
- Receptor grid spacing, coordinates, and elevations
- Inclusion of stack parameters and coordinates
- Building-dimension-specific input parameters

An important aspect of the air quality modeling analysis is the selection of site representative surface and upper air meteorological data, preparation of the receptor grid and terrain elevations, and identification of onsite structures. The meteorological data used to estimate air quality impacts from the Evergreen mill are the surface data from the Eureka Woodley Island NWSO and twice-daily wind data from the Oakland upper air station. These data are processed using the AERMET preprocessor. Receptor and terrain elevations also are entered into the AERMAP preprocessor. The AERMET and AERMAP programs are part of the AERMOD modeling system.

Onsite structures can have significant effects on plume dispersion. The four largest structures at the mill site were entered into the Building Profile Input Program (BPIP) so the direction specific building profile information could be calculated for each point source and included in the dispersion analysis.

## 3.1 Surface Weather Data

The Evergreen Pulp mill is located in Samoa, California, on a sandy peninsula that separates Humboldt Bay from the Pacific Ocean. Eureka is on the eastern side of Humboldt Bay. There are no hills in Samoa and Eureka that would divert or direct prevailing winds. The land slopes gently upward from Humboldt Bay to the Coastal Range about 3 miles east of Samoa. The top of the first ridge is about 10 miles east of the Evergreen mill.

Surface data from the Woodley Island Station were used in this analysis. Weather observations are made manually by staff at the Eureka Woodley Island NWSO each hour of the day. The observations are written on WS Form B-16. Each form covers a 24-hour period. Daily summaries of weather data for the day are taken from observations, and hand written on the form including maximum and minimum daily temperatures, average sky cover, prevailing wind direction, and average daily wind speed. The forms are gathered and periodically (weekly, monthly) mailed to the National Climatic Data Center (NCDC) in Kentucky. There, the forms are scanned into an image format (.tif) and stored electronically. Copies of the forms can be requested from the NCDC for any period of record. The NCDC will print copies of the stored electronic forms and send the paper copies. The observations

are not stored in a digital format and the NCDC does not make the electronic image files available.

WS Form B-16 contains the following hourly meteorological observations:

- Temperature (°F)
- Precipitation (inches)
- Wind direction (tens of degrees)
- Wind speed (miles per hour)
- Sky cover (0 to 8 scale), only for daytime hours
- Lowest visibility (miles)
- Present weather
- Gusts (miles per hour)

### 3.1.1 Processing Woodley Island Meteorological Data for Use in AERMOD

Preparing meteorological data from Eureka Woodley Island NWSO observations compatible with the AERMOD model required the following steps:

1. Order meteorological data from the NCDC:
  - Copies of the WS Form B-16 from the Eureka Woodley Island NWSO (Station ID: KEKA, WBAN# 24213) for the period January 1, 2001, through December 31, 2005.
  - Surface weather observations in a digital data format (DATSAV) for the Arcata station (Station ID: KACV, WBAN# 24283) for the period January 1, 2001, through December 31, 2005.
  - Twice daily rawinsonde data (TD 6301) from the Oakland upper air station (Station ID: KOAK, WBAN# 23230) for the period January 1, 2001, through December 31, 2005.
2. Prepare the Eureka Woodley Island NWSO surface meteorological data:
  - Enter hourly surface data from the Eureka Woodley Island NWSO for the 5-year period (2001 through 2005). Optical character reading software was considered for this application, but the observations were written by hand and the possible error rate was estimated to be too high to use this option. Data were hand keyed into a spreadsheet.
  - Perform data quality checks to ensure that the data were entered correctly. The entered data were compared to typical data ranges and the maximum and minimum values reported for that period.
3. Fill in the missing nighttime sky cover observations using the Arcata station data (visual observations of the sky cover were not made during the nighttime hours at Woodley Island):
  - Identify periods of missing sky cover observations.
  - Replace missing data with automated observations from the Arcata station.

#### 4. Format combined data file for input to AERMET meteorological data preprocessor:

- Prepare fixed-format text files from the spreadsheet data.
- Randomize the 10-degree wind direction observations from the Woodley Island NWSO using the CALMET random wind direction method.
- Prepare the rawindsonde data for input to the AERMET preprocessor to characterize the vertical temperature, wind speed, and wind direction profiles.
- Enter surface characteristics by wind direction sector. Surface characteristics include albedo, Bowen ration, and roughness length. These data are interpreted from land use data and used to predict ambient turbulence levels.

Two files were created that were used as input to the AERMOD model. The surface file contains the site's surface temperature, wind speed and direction, surface fluxes of heat and momentum, scaling and stability parameters, and boundary layer height. The profile file contains one or more levels above the surface layer of temperature, wind speed, and direction.

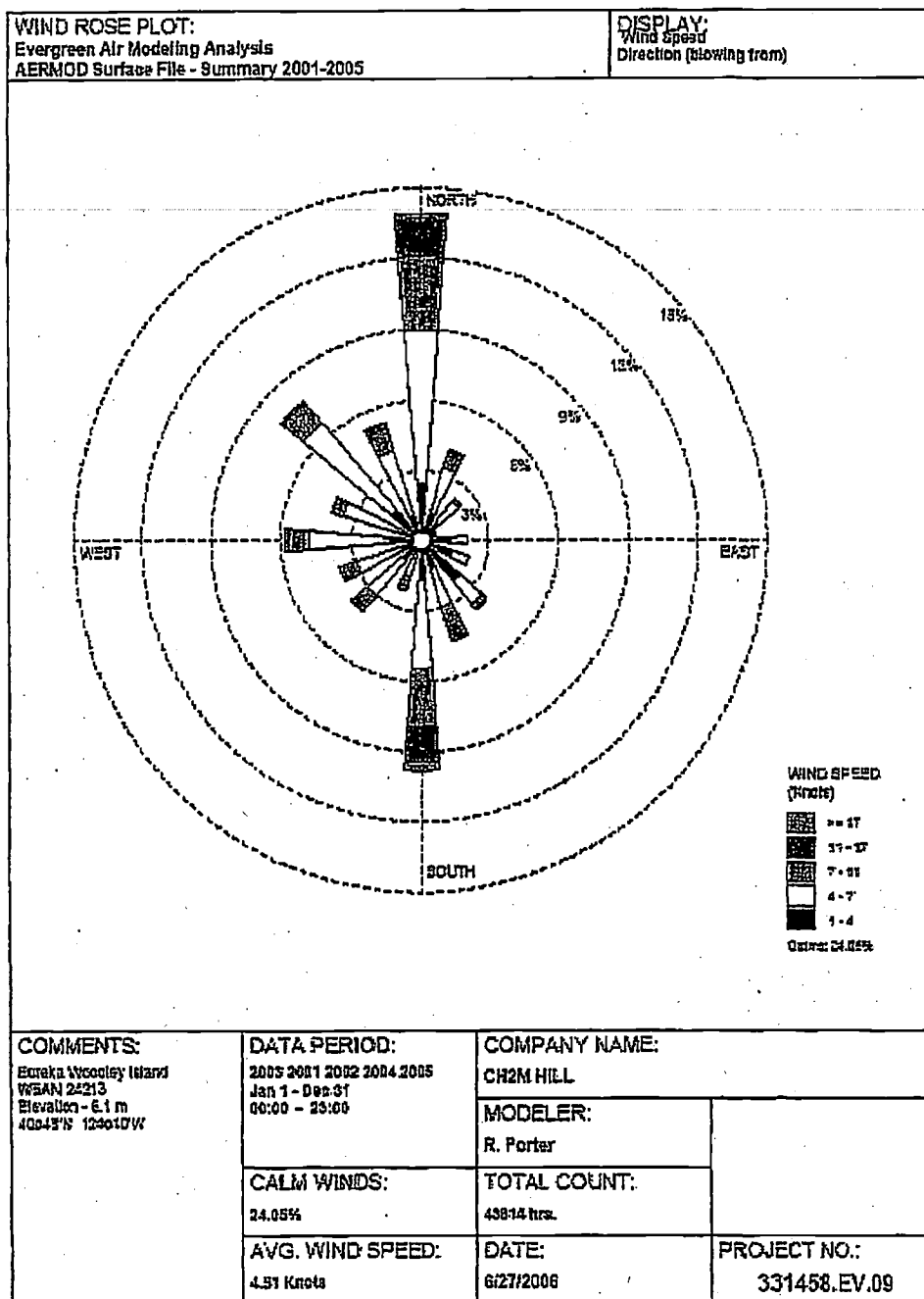
### 3.1.2 Quality Control Checks of Surface Observations

Several methods were used to check and cross check accuracy of the Eureka Woodley Island surface observations. The temperature, wind direction, wind speed, and cloud cover were checked for extreme values. Temperatures less than 30°F and greater than 90°F were checked. Wind directions, expressed in degrees, ranged from 0 to 36; values greater than 36 were corrected. The highest wind speeds were checked. Cloud cover ranged from 0 to 8; values greater than 8 were corrected.

The WS Form B-16 provides space for noting the maximum and minimum daily temperatures, average sky cover, prevailing wind, and average wind speed. These values were calculated from the digital data and compared to the written summaries on WS Form B-16. Discrepancies between the digital and written summaries were evaluated. Direct comparisons between the written observations and the digital data were made for random days.

Values that contributed to processing errors were checked and corrected. Consistency checks within the meteorological processing algorithms were also made. Wind rose comparisons provided a qualitative assessment between the data sets. Figure 3-1 is a wind rose summary for the 5-year Eureka Woodley Island wind speed and wind direction data. The prevailing northerly wind direction is consistent with the previous 3-year wind rose for this station.

Table 3-1 provides a summary of the missing and calm hours found in the raw data set and the final modeled data set. Except for a brief period in 2003 when an instrument was being repaired, the Woodley Island NWSO had 100 percent data capture. The missing data in the final modeling files are due to missing nighttime cloud cover observations or missing upper air data, which prevented that hour from being included in the modeling analysis, resulting in an overall data capture of 96 to 98 percent. Calm hours were consistent between the raw and final data sets.



WIND-LOT View - Eureka Woodley Island Station

FIGURE 3-1  
Wind Rose for Eureka Woodley Island Station from 2001 to 2005

TABLE 3-1  
Raw and Run Meteorological Data Comparison  
*Evergreen Pulp Human Health Risk Assessment*

		2001	2002	2003	2004	2005
Total Hours		8,760	8,760	8,760	8,784	8,760
Raw Data	Calm hours	1,735	2,303	2,182	2,197	2,099
	% Calm hours	19.8	26.3	24.9	25.0	24.0
	Missing hours	0	0	7	0	0
	% Missing hours	0.0	0.0	0.1	0.0	0.0
Run Data	Calm hours	1,735	2,304	2,189	2,197	2,099
	% Calm hours	19.8	26.3	25.0	25.0	24.0
	Missing hours	123	252	287	105	178
	% Missing hours	1.4	2.9	3.3	1.2	2.0

Notes:

Raw Data = Digitized Eureka Woodley Island surface data before processing

Run Data = Processed meteorological data ready for use as modeling inputs

## 3.2 Upper Air Data

In addition to surface weather observations, dispersion modeling requires the estimation of mixing height, the upper boundary of the surface mixing layer. This layer caps the mixing of plumes vertically. Mixing heights are derived from upper air soundings that come from weather balloons released from a limited number of weather stations across the country. The nearest stations to the Evergreen mill are the Medford, Oregon, station at the Rogue Valley International Airport and the Oakland, California, station at the Oakland Metropolitan International Airport.

The Medford station is about 205 kilometers (127 miles) north-northeast of the project site and at an elevation of 395 meters (1,297 feet). Thus, the observations from this site are not likely to be representative of coastal conditions.

The Oakland station is about 383 kilometers (238 miles) south-southwest of the project site. Although the station is at an elevation near sea level, its location along San Francisco Bay may have different conditions from those at the project site.

The rawinsonde data from the Oakland station were used for this analysis. The rawinsonde data not only allow for the determination of mixing height, but also estimates of the vertical profiles of temperature, wind speed, and wind directions.

## 3.3 AERMOD Dispersion Model

AERMOD dispersion modeling system was developed jointly by the American Meteorological Society and the EPA. It is a steady-state plume dispersion model for assessment of pollutant concentrations from a variety of sources. AERMOD simulates transport and dispersion based on an up-to-date characterization of the atmospheric boundary layer. Building cavity and wake effects are simulated through the use of the PRIME downwash algorithm incorporated into AERMOD. Pollutant concentrations are

predicted at downwind receptor location for each hour using sequential preprocessed meteorological data.

Source parameters and modeling control options are entered directly into AERMOD either through a text formatted input file or a model interface provided by a third-party vendor. Meteorological data and surface boundary layer parameters are prepared using the AERMET preprocessor module. The AERMAP preprocessor module interprets digital terrain elevation model outputs and assigns base elevations to each of the emission sources and receptor grid points and evaluates elevated terrain features. The outputs from the AERMET and AERMAP modules are accepted as input data files by AERMOD.

### 3.3.1 AERMET Module

The preparation of the meteorological data files using AERMET is a three-step process. The first step is to extract raw hourly surface observations and upper air sounding. The hourly surface observations are from the Eureka Woodley Island Station with supplemental night time cloud cover observations provided from the Arcata Airport station. Upper air sounding are from the Oakland International Airport. The extracted files are checked by the AERMET module for consistency, and any missing or calm hours are identified.

The second step is to merge the meteorological data obtained from the first step with additional meteorological variables derived from the surface land use features. These additional parameters are as follows:

- Surface roughness length – A measure of surface friction derived from the amount of urban development.
- Albedo – A ratio of the reflected radiation to the total incident radiation derived from the brightness or darkness of a surface.
- Bowen ratio – A measure of the sensible heat flux derived from estimates of surface soil moisture.

CH2M HILL uses the AERSurface program to determine these surface parameters from U.S. Geological Survey (USGS) terrain files. The AERSurface program reads the geodata file containing land use and land cover data created by the CALPUFF terrain preprocessor and creates a gridded array of average values for the surface roughness length, albedo, and Bowen ratio.

The third step is to prepare two output files that are used as meteorological data input files by AERMOD. The surface file has the extension "\*.sfc" and contains the surface meteorological observations and surface layer scaling parameters. The profile file has the extension "\*.pfl" and contains information used to estimate the vertical temperature, wind speed, and wind direction profiles.

### 3.3.2 AERMAP Module

The AERMAP module reads the USGS Digital Elevations Model files and assigns the base elevations to each source and receptor grid point. The AERMAP model also interprets the elevated terrain features and assigns a height scaling factor to each receptor for use by AERMOD to predict impacts on elevated terrain features.

### 3.3.3 AERMOD Module

The AERMOD input file contains information to guide the execution of the model and summarize the results. The input file is organized into several groups. The control options define how the model is to be run. The regulatory default options are used for regulatory applications. The source options contain information about each emission point and may include direction specific building profile values for stacks subject to building cavity and wake effects. The receptor options contain the receptor grid and elevations input information from the AERMAP module. The control parameters for the meteorological data are defined including the \*.sfc and \*.pfl files created by the AERMET module. The output options define how the output data are to be organized.

## 3.4 Good Engineering Practice Stack Height and Downwash

AERMOD can account for building downwash effects. Stack locations, heights, building locations, and dimensions were input to BPIP-PRIME. The first part of BPIP algorithm determines and reports on whether or not a stack follows Good Engineering Practice stack height guidance or is being subjected to wake effects from a structure or structures. The second part calculates direction-dependent "equivalent building dimensions" if a stack is being influenced by structure wake effects. The BPIP-PRIME output will be used in AERMOD as a part of the source options input data.

The exterior dimensions, presented in Table 3-2, for the recovery boiler, the former recovery boiler, the bleach plant, and the pulp machine buildings are entered into the BPIP-PRIME preprocessor. As shown on Figure 3-2, these are the largest structures on the mill site and are the controlling structures with respect to the determination of Good Engineering Practice stack heights and building cavity and wake effects. Direction-specific building heights, projected widths, and distances from the emissions source to the buildings are calculated for each emission source and provided as input to the AERMOD source input data.

TABLE 3-2  
Building Dimensions  
*Evergreen Pulp Human Health Risk Assessment*

Building	Width (feet)	Length (feet)	Height (feet)
Recovery Boiler	98	108	200
Old Recovery Boiler	88	108	114
Bleach Plant <sup>a</sup>	99 (east) 59 (west)	178 (north) 138 (south)	86
Pulp Machine/Dryer	76	400	68

<sup>a</sup>Building shape is 

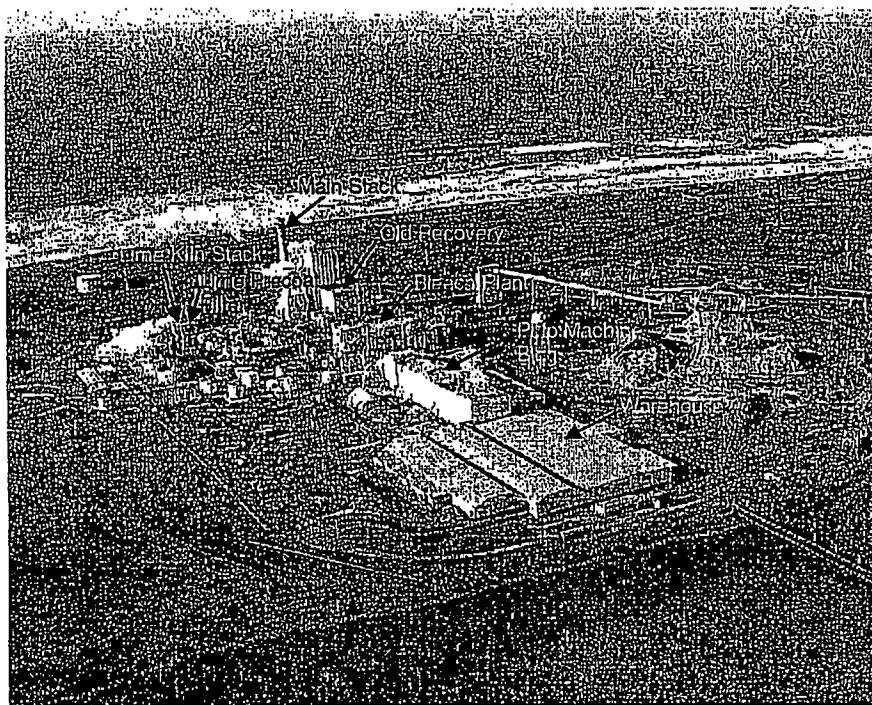


FIGURE 3-2  
Aerial View of Evergreen Pulp Mill Site

### 3.5 Receptor Selection

Receptor and source base elevations were determined from USGS Digital Elevation Model data using the 7.5-minute format (i.e., 30-meter spacing between grid nodes). All coordinates were referenced to Universal Transverse Mercator North American Datum 1927, Zone 11.

Cartesian coordinate receptor grids were used to provide adequate spatial coverage surrounding the project area for assessing ground-level pollutant concentrations, to identify the extent of significant impacts, and to identify maximum impact locations. A fine grid with 100-meter resolution receptor grid was developed. An outer grid with 500-meter spacing extends outward as necessary to estimate impact across the study area. The fence line receptors are spaced at 50-meter intervals. Concentrations within the facility fence line were not calculated.

This initial receptor grid contained 1,344 receptors, consistent with the previous modeling analysis. Initial runs showed that some predicted impacts occurred on the edge of the fine grid, so the fine grid area was expanded to the east and south to further resolve pollutant impacts. The revised grid contained 1,962 receptor points.

### 3.6 AERMOD-HARP Interface

The HARP model includes the ISC dispersion model. The primary advantage is that a single modeling system can be used for the exposure assessment and dose-response assessment when characterizing risk. The EPA has since recommended that the AERMOD be used

when demonstrating compliance with the National Ambient Air Quality Standards. Although this does not mean that the ISC model cannot be used for HHRA's, at the direction of the NCUAQMD, the AERMOD model was used for this analysis. Meteorological data and terrain and receptor data had already been prepared for use with AERMOD.

Within the HARP modeling system, ISC would create two intermediate files that define the emission sources and receptor array and characterize the atmospheric dispersion for each emission source and averaging period at each receptor. The intermediate files are normally internal to the functioning of HARP. To incorporate AERMOD into the HARP modeling system, the two intermediate files containing source and receptor information and dispersion factors were created outside of HARP and fed into HARP for further processing of dose-response relationships and risk characterization. Thus, none of the algorithms in HARP that assess health affects were manipulated or modified. The dispersion modeling files, the intermediate files for HARP, and the HARP modeling output files are included in Appendix B.

*Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk* (CARB, 2003).

The modeled impacts of cancer and noncancer risks associated with TAC emissions were evaluated and compared to the applicable significance thresholds. Maximally exposed residential (MEIR) and worker (MEIW) receptors were determined based on the modeling results.

SECTION 6

## Works Cited

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California Air Resources Board (CARB). 2003. *Recommended Interim Risk Management Policy for Inhalation-based Residential Cancer Risk*. October.

California Air Resources Board (CARB) and Office of Environmental Health Hazard Assessment (OEHHA). 2005. *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values*. April.

National Council for Air and Stream Improvement (NCASI). 1994. *Volatile Organic Emissions from Pulp and Mill Sources – Part VII, Pulp Dryers and Paper Machines at Integrated Chemical Pulp Mills*. Technical Bulletin 681 (TB 681). October.

Office of Environmental Health Hazard Assessment (OEHHA). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines*. August.

## SECTION 4

# Dose-response Assessment

The results of the AERMOD dispersion modeling analysis represent an intermediate product in the HHRA process. The HARP model was subsequently used to determine cancer, chronic, and acute health risks. To assess chronic and acute noncancer exposures, annual and 1-hour TAC concentrations are compared with the RELs developed by OEHHA to obtain a chronic or acute hazard index. Cancer risks were evaluated based on the inhalation cancer potency, oral slope factor, frequency and duration of exposure at the receptor, and breathing rate of the exposed persons.

This HHRA included potential health impacts from home grown produce, dermal absorption, soil ingestion, and mother's milk, as required by OEHHA guidelines. The inhalation cancer potency, oral slope factor values, and RELs used to characterize health risks associated with the modeled impacts were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (OEHHA and CARB, 2005), and are shown in Table 4-1.

TABLE 4-1  
Risk Assessment Health Values for Toxic Air Contaminants  
*Evergreen Pulp Human Health Risk Assessment*

Toxic Air Contaminant	CAS No.	Cancer Risks		Noncancer Effects		
		Inhalation Cancer Potency (mg/kg-day)	Oral Slope Factor ( $\mu\text{g}/\text{m}^3)^{-1}$	Chronic Inhalation REL ( $\mu\text{g}/\text{m}^3$ )	Chronic Oral (mg/kg-day)	Acute Inhalation REL ( $\mu\text{g}/\text{m}^3$ )
1,1,1-Trichloroethane	71556	NA	NA	1,000	NA	68,000
1,1,2-Trichloroethane	79005	0.06	NA	NA	NA	NA
✕ Acetaldehyde	75070	0.01	NA	9	NA	NA
Acrolein	107028	NA	NA	0.080	NA	0.19
Ammonia	7664417	NA	NA	200	NA	3,200
* Benzene	71432	0.1	NA	60	NA	1,300
Bis(2-ethylhexyl)phthalate	117817	0.0084	0.0084	70	NA	NA
Bromomethane	74839	NA	NA	5	NA	3,900
✕ Carbon Tetrachloride	56235	0.15	NA	40	NA	1,900
Chlorobenzene	108907	NA	NA	1,000	NA	NA
✕ Chloroform	67663	0.019	NA	300	NA	150
✕ Ethyl Benzene	100414	NA	NA	2,000	NA	NA
✕ Formaldehyde	50000	0.021	NA	3	NA	94
Hexachlorocyclopentadiene	77474	NA	NA	0.24	NA	NA
Isopropanol	67630	NA	NA	7,000	NA	3,200
Methanol	67561	NA	NA	4,000	NA	28,000

## SECTION 5

# Risk Characterization

The NCUAQMD has established health risk thresholds to determine the significance of health impacts from proposed land use development projects. Based on these thresholds, a project would produce less than significant cancer risk impacts if the maximum incremental cancer risk due to the project alone is less than 10 in 1 million ( $1 \times 10^{-5}$ ).

For chronic and acute noncancer exposures, a hazard index (defined as the summation of predicted TAC concentrations divided by their respective RELs) less than 1.0 indicates that the exposure would present insignificant health risks. Hazard indices above 1.0 represent the potential for a significant health risk.

## 5.1 HARP Results

Table 5-1 presents a summary of the maximum potential health impacts that would occur for the Evergreen operation. The cancer risk at the point of maximum impact (PMI) is about 35 in 1 million. However, the PMI is located on the facility's north fenceline, which is not a residential or commercial/industrial receptor. The cancer risk applicable to the MEIR is predicted to be 2.5 in 1 million, located at about 740 meters southeast from the Evergreen facility boundary. The cancer risk applicable to the MEIW is predicted to be 1.4 in 1 million, located at approximately 500 meters from the south facility boundary. Both the MEIR and MEIW cancer risk values for the estimated Evergreen emissions are below the NCUAQMD significance threshold of 10 in 1 million. The residential cancer risk isopleths are shown on Figure 5-2.

TABLE 5-1  
Risk Summary of Evergreen Operation Emissions  
*Evergreen Pulp Human Health Risk Assessment*

	Modeled Maximum Cancer Risk	Modeled Maximum Chronic Hazard Index	Modeled Maximum Acute Hazard Index
Point of Maximum Impact	3.5E-05 <sup>a</sup>	1.4 <sup>a</sup>	5.7
Maximum Exposed Individual Resident	2.5E-06	0.09	1.7
Maximum Exposed Individual Worker	1.4E-06	0.17	2.3
Significance Threshold	1.0E-05	1	1

<sup>a</sup>Significance thresholds for cancer risk and chronic hazard index only apply to MEIR and MEIW locations.

The maximum chronic hazard index increment is predicted to be 0.17, at a commercial/industrial receptor about 500 meters from the facility's south boundary. The maximum acute hazard index increment is predicted to be 5.7, in the middle of the facility's north boundary. The chronic hazard indices of the Evergreen operation are below the NCUAQMD significance threshold of 1 at residential and commercial/industrial receptors. However, the modeled maximum acute hazard index exceeds the NCUAQMD significance threshold.

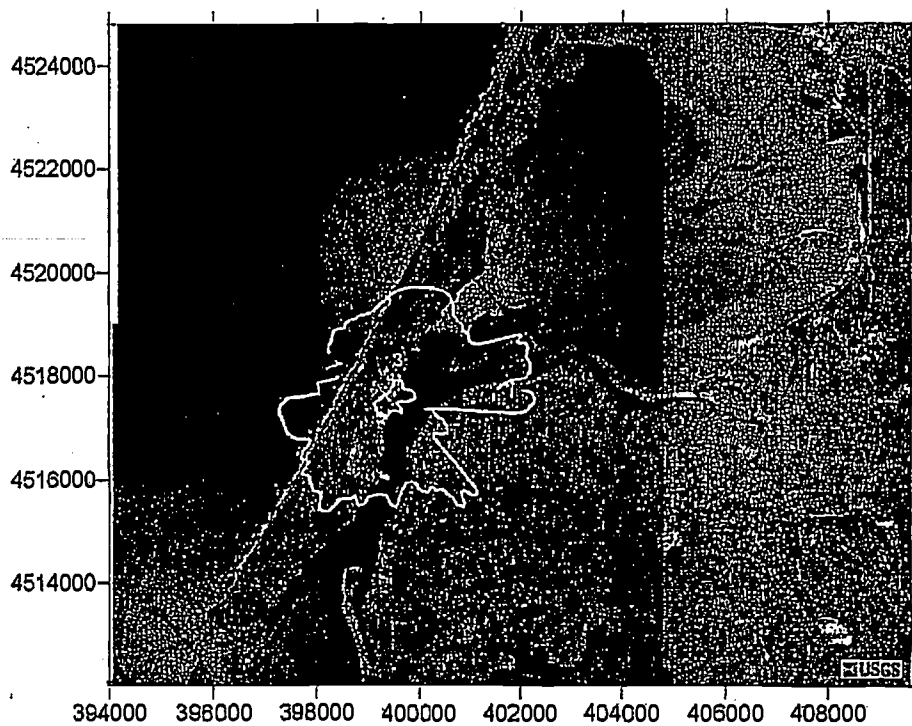


FIGURE 5-1  
Plot of Hazard Index for Acute Exposures

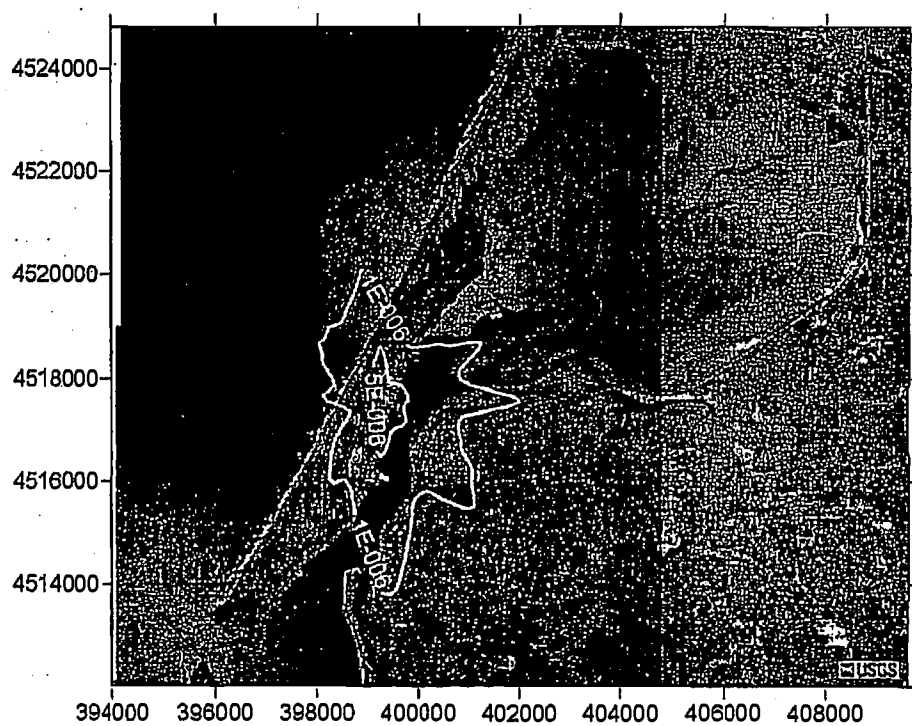


FIGURE 5-2  
Plot of Lifetime Cancer Risk for Residential Exposures

## 5.2 Top Contributing Sources and Chemicals

Each emission source's contributions to the maximum health risk impacts is shown in Tables 5-2 and 5-3. The smelt dissolving tank and lime kiln contribute more than 50 percent to the cancer risks. The pulp dryer is the top contributor to the chronic health risks, accounting for about 73 percent of the MEIR and 50 percent of the MEIW chronic hazard indices, respectively. Acute health risks were mostly due to the pulp dryer emissions, which accounted for about 99.5 percent of the acute hazard index.

TABLE 5-2

Top Contributing Sources to Cancer Risks and Chronic Hazard Index at the Maximum Exposed Receptors  
*Evergreen Pulp Human Health Risk Assessment*

Health Risk	Source	Contributions (%)	
		MEIR	MEIW
Cancer	Smelt Dissolving Tank	38.0	35.7
	Lime Kiln	20.2	29.2
	Recovery Boiler	13.1	12.8
	Pulp Dryer	12.3	5.4
	Green Liquor Clarifiers	11.5	10.1
Chronic Hazard Index	Pulp Dryer	73.3	50.5
	Green Liquor Clarifiers	11.9	16.6
	Slakers and Causticizing Tanks	7.9	21.6
	Smelt Dissolving Tank	4.2	6.3
	Lime Kiln	1.0	2.3

TABLE 5-3

Top Contributing Sources to Acute Hazard Index at the Maximum Exposed Receptors  
*Evergreen Pulp Human Health Risk Assessment*

Health Risk	Source	Contributions (%)
Acute Hazard Index (at PMI)	Pulp Dryer	99.5
	Smelt Dissolving Tank	0.51
	Slakers and Causticizing Tanks	0.03
	High-density Tanks	0.009
	Combined Bleach Plant and Second PO Hoods	0.003

Tables 5-4 and 5-5 presents the top contributing TACs to the maximum health risk values for the Evergreen mill. Hexavalent chromium and acetaldehyde emissions contributed a majority of the cancer risks at both MEIR and MEIW locations. Acrolein is the greatest contributor to chronic and acute risks, accounting for 99.6 percent of acute hazard index. However, as described in Section 2.2, the emissions rates of acrolein used in this HHRA are likely overly conservative.

scenarios. The acute health risk exceeds the NCUAQMD threshold because of the estimated acrolein emissions from the pulp dryer, which require further study to confirm their validity. As mentioned previously, acrolein emissions are a focus area for further study by NCASI.

In summary, the key conclusions of this study are as follows:

- The cancer risk and hazard index for chronic exposures applicable to the MEIR and MEIW receptors are below the significance threshold. The hazard index for acute exposures exceeds the significance threshold almost entirely because of the estimated acrolein emissions from the pulp dryer.
- Health risk projections applicable to the PMI are closest to the plant boundary, where nobody lives or works.
- Risks associated with MEIRs and MEIWs are lower because these areas are farther from the mill site.
- Contour plots (Figures 5-1 and 5-2) show that areas of cancer risk (greater than  $1 \times 10^{-6}$ ) or acute exposure (greater than 1) are limited in extent and minimally affect residential areas.
- Acetaldehyde and acrolein emissions are primary drivers of chronic and acute risk and are likely overestimated by as much as a factor of 2.
- Further investigation of acetaldehyde and acrolein emissions should demonstrate that the acute health risks are below significance levels.
- Of the TACs, hexavalent chromium contributes the most cancer risk. Evergreen plans to install an electrostatic precipitator on the lime kiln that is expected to reduce emissions of metals, including hexavalent chromium.

*TAC = Toxic Air Contaminant*

**Appendix A**  
**Estimated Emission Rates**

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TABLE A-1

Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/hr)	Hourly Emissions (lb/hr)	Hourly Emissions (lb)	Data Source
High-density Tanks (4)	Operating Hours of Facility	1,1,2-trichloroethane	6.00E-08	lb	hr	2.02E-01	2.40E-05	2.40E-05	3.02E-08	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
High-density Tanks (4)	Operating Hours of Facility	1,2-Dichloroethylene	7.30E-05	lb	hr	2.45E+00	2.80E-04	2.92E-04	3.68E-05	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Acetaldehyde	5.20E-03	lb	hr	1.70E+02	1.99E-02	2.08E-02	2.62E-03	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Acetone	8.50E-03	lb	hr	2.80E+02	3.28E-02	3.40E-02	4.20E-03	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Alpha-pinene	1.70E-01	lb	hr	5.71E+03	6.52E-01	6.80E-01	8.57E-02	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Benzene	4.30E-08	lb	hr	1.44E-01	1.69E-05	1.72E-05	2.17E-08	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
High-density Tanks (4)	Operating Hours of Facility	Beta-pinene	1.70E-01	lb	hr	5.71E+03	6.52E-01	6.80E-01	8.57E-02	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Chlorobenzene	1.20E-05	lb	hr	4.03E-02	4.80E-06	4.80E-06	6.05E-07	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Chloroform	1.10E-02	lb	hr	3.70E+02	4.22E-02	4.40E-02	5.54E-03	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Crotolaldehyde	2.80E-04	lb	hr	9.41E+00	1.07E-03	1.12E-03	1.41E-04	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Ethanol	2.10E-01	lb	hr	7.06E+03	8.09E-01	8.40E-01	1.06E-01	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Methanol	2.40E-01	lb	hr	8.06E+03	9.21E-01	9.60E-01	1.21E-01	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Methyl ethyl ketone	1.10E-02	lb	hr	3.70E+02	4.22E-02	4.40E-02	5.54E-03	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Methyl isobutyl ketone	1.10E-05	lb	hr	3.70E-01	4.22E-05	4.40E-05	5.54E-06	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
High-density Tanks (4)	Operating Hours of Facility	n-Heptane	2.00E-05	lb	hr	6.72E-01	7.67E-05	8.00E-05	1.01E-05	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Phenol	1.90E-02	lb	hr	6.39E+02	7.29E-02	7.59E-02	9.59E-03	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Styrene	2.70E-04	lb	hr	9.07E+00	1.04E-03	1.08E-03	1.36E-04	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Terpenes	1.00E-02	lb	hr	3.36E+02	3.84E-02	4.00E-02	5.04E-03	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Telradichloroethylene	8.30E-05	lb	hr	2.12E+00	2.42E-04	2.52E-04	3.18E-05	NCASI factor for unbleached storage tanks TB 858 Table 11, Median Data.
High-density Tanks (4)	Operating Hours of Facility	Toluene	8.60E-06	lb	hr	2.88E-01	3.30E-05	3.44E-05	4.33E-06	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
High-density Tanks (4)	Operating Hours of Facility	Trichloroethylene	5.20E-06	lb	hr	1.75E-01	1.99E-05	2.08E-05	2.62E-06	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
High-density Tanks (4)	Operating Hours of Facility	Volatile organic compounds	3.70E+00	lb	hr	1.24E+05	1.42E+01	1.48E+01	1.85E+00	NCASI TB 854 Table 4.4 VOC via method 25A, Mean Data.
High-density Tanks (4)	Operating Hours of Facility	Xylene (m,p-)	8.50E-09	lb	hr	2.18E-01	2.49E-05	2.60E-05	3.28E-06	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
High-density Tanks (4)	Operating Hours of Facility	Xylene (o-)	1.80E-08	lb	hr	6.05E-02	6.90E-06	7.20E-06	9.07E-07	NCASI factor for unbleached storage tanks TB 858 Table 11, 80th average.
Second PO Washer Seal Tank	Pulp Produced	Acetaldehyde	2.59E-04	lb	ADTP	5.48E+01	6.28E-03	7.94E-03	9.85E-04	Radcan Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-17 of 1.28E-04 kg/hr for Acetaldehyde converted to lb/ADTP.
Second PO Washer Seal Tank	Pulp Produced	Acetone	6.68E-04	lb	ADTP	1.43E+02	1.63E-02	2.04E-02	2.57E-03	Radcan Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 8 and 13. Emissions Rate from Vent V-17 of 3.35E-04 kg/hr for Acetone converted to lb/ADTP.



TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/hr)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/day)	Data Source
NGC Incinerator	Pulp Produced	1,2,4-trichlorobenzene	2.50E-05	b	ADTP	5.35E+00	6.11E-04	7.89E-04	8.65E-05	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (SDN average).
NGC Incinerator	Pulp Produced	1,2-Dichloroethylene	1.70E-04	b	ADTP	3.64E+01	4.16E-03	5.21E-03	6.56E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Acetaldehyde	2.40E-04	b	ADTP	5.14E+01	5.86E-03	7.35E-03	9.26E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Acetone	2.90E-04	b	ADTP	6.21E+01	7.09E-03	8.88E-03	1.12E-03	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Benzene	3.00E-04	b	ADTP	6.42E+01	7.33E-03	9.19E-03	1.16E-03	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Benzophenone	4.00E-06	b	ADTP	8.55E-01	9.77E-05	1.23E-04	1.54E-05	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (SDN average).
NGC Incinerator	Pulp Produced	Carbon Tetrachloride	7.50E-05	b	ADTP	1.61E+01	1.83E-03	2.36E-03	2.89E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (SDN average).
NGC Incinerator	Pulp Produced	Formaldehyde	2.00E-04	b	ADTP	4.26E+01	4.89E-03	6.15E-03	7.72E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Methanol	7.00E-03	b	ADTP	1.50E+03	1.71E-01	2.14E-01	2.70E-02	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Methyl ethyl ketone	8.40E-05	b	ADTP	1.80E+01	2.05E-03	2.57E-03	3.24E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	n-Hexane	6.10E-05	b	ADTP	1.31E+01	1.49E-03	1.87E-03	2.35E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Styrene	1.90E-05	b	ADTP	4.07E+01	4.64E-05	5.82E-05	7.33E-06	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (SDN average).
NGC Incinerator	Pulp Produced	Terpinenes	8.70E-04	b	ADTP	1.86E+02	2.13E-02	2.66E-02	3.36E-03	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (median value, ND-1/2 DL).
NGC Incinerator	Pulp Produced	Xylene (m,p)	4.50E-05	b	ADTP	9.53E+00	1.10E-03	1.38E-03	1.74E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (SDN average).
NGC Incinerator	Pulp Produced	Xylene (o-)	6.10E-05	b	ADTP	1.31E+01	1.49E-03	1.87E-03	2.35E-04	TB 658 Table 10 - Air Toxic Emissions from Kraft NCG Thermal Oxidizers (SDN average).
Combined Bleach Plant and Second PO Hoods	Pulp Produced	Acetaldehyde	2.20E-03	b	ADTP	4.71E+02	5.38E-02	6.74E-02	8.49E-03	Radian Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-11 of 1.10E-03 kg/yr Pulp for Acetaldehyde converted to lb/ADTP.
Combined Bleach Plant and Second PO Hoods	Pulp Produced	Acetone	2.20E-03	b	ADTP	4.71E+02	5.38E-02	6.74E-02	8.49E-03	Radian Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-11 of 1.10E-03 kg/yr Pulp for Acetone converted to lb/ADTP.
Combined Bleach Plant and Second PO Hoods	Pulp Produced	Chloroform	5.12E-08	b	ADTP	1.10E+00	1.25E-04	1.57E-04	1.95E-05	Radian Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-11 of 2.50E-05 kg/yr Pulp for Chloroform converted to lb/ADTP.
Combined Bleach Plant and Second PO Hoods	Pulp Produced	Formaldehyde	8.24E-05	b	ADTP	1.76E+01	2.01E-03	2.52E-03	3.18E-04	Radian Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-11 of 4.12E-05 kg/yr Pulp for Formaldehyde converted to lb/ADTP.
Combined Bleach Plant and Second PO Hoods	Pulp Produced	Methanol	2.08E-03	b	ADTP	4.41E+02	5.03E-02	6.31E-02	7.95E-03	Radian Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-11 of 1.03E-03 kg/yr Pulp for Methanol converted to lb/ADTP.
Combined Bleach Plant and Second PO Hoods	Pulp Produced	Methyl ethyl ketone	2.20E-03	b	ADTP	4.71E+02	5.38E-02	6.74E-02	8.49E-03	Radian Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocols, (September 1995), pages 9 and 13. Emissions Rate from Vent V-11 of 1.10E-03 kg/yr Pulp for Methyl Ethyl Ketone converted to lb/ADTP.

TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lbblt)	Hourly Emissions (lb/hr)	Hourly Emissions (gblt)	Data Source
EOP Seal Tank Vent	Pulp Produced	Acetaldehyde	1.81E-04	b	ADTP	3.87E+01	4.41E-03	5.53E-03	6.97E-04	Radco Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocol, (September 1995), pages 9 and 13. Emissions Rate from Vent V-16 of 8.03E-05 kg/hr for Acetaldehyde converted to lb/ADTP.
EOP Seal Tank Vent	Pulp Produced	Acetone	3.60E-04	b	ADTP	7.71E+01	8.80E-03	1.10E-02	1.39E-03	Radco Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocol, (September 1995), pages 9 and 13. Emissions Rate from Vent V-16 of 1.80E-04 kg/hr for Acetone converted to lb/ADTP.
EOP Seal Tank Vent	Pulp Produced	Chloroform	1.48E-06	b	ADTP	3.17E-01	3.62E-05	4.94E-05	5.72E-06	Radco Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocol, (September 1995), pages 9 and 13. Emissions Rate from Vent V-16 of 7.41E-07 kg/hr for Chloroform converted to lb/ADTP.
EOP Seal Tank Vent	Pulp Produced	Formaldehyde	1.14E-06	b	ADTP	2.43E-01	2.78E-05	3.48E-05	4.38E-06	Radco Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocol, (September 1995), pages 9 and 13. Emissions Rate from Vent V-16 of 5.88E-07 kg/hr for Formaldehyde converted to lb/ADTP.
EOP Seal Tank Vent	Pulp Produced	Methanol	3.26E-03	b	ADTP	6.98E+02	7.97E-02	8.98E-02	1.28E-02	Radco Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocol, (September 1995), pages 9 and 13. Emissions Rate from Vent V-16 of 1.03E-03 kg/hr for Methanol converted to lb/ADTP.
EOP Seal Tank Vent	Pulp Produced	Methyl ethyl ketone	4.40E-05	b	ADTP	9.42E+00	1.08E-03	1.35E-03	1.70E-04	Radco Corporation, Development of Pulp and Paper Industry Air Emissions Sampling Protocol, (September 1995), pages 9 and 13. Emissions Rate from Vent V-16 of 2.20E-05 kg/hr for Methyl Ethyl Ketone converted to lb/ADTP.
Pulp Dryer	Finished Pulp from Dryer	1,2,4-Trichlorobenzene	1.20E-02	b	ADTFP	2.57E+03	2.93E-01	3.68E-01	4.63E-02	TR 653 Table 18 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Acetaldehyde	3.30E-02	b	ADTFP	7.06E+03	8.08E-01	1.01E+00	1.27E-01	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Acetone	1.20E-02	b	ADTFP	2.57E+03	2.93E-01	3.68E-01	4.63E-02	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Anisole	1.80E-03	b	ADTFP	3.43E+02	3.91E-02	4.90E-02	6.17E-03	TR 653 Table 18 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Benzene	6.40E-04	b	ADTFP	1.37E+02	1.58E-02	1.98E-02	2.47E-03	TR 653 Table 18 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Methanol	7.10E-02	b	ADTFP	1.52E+04	1.74E+00	2.17E+00	2.74E-01	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Methyl ethyl ketone	2.40E-03	b	ADTFP	5.14E+02	5.88E-02	7.35E-02	9.28E-03	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Methyl isobutyl ketone	2.00E-03	b	ADTFP	4.28E+02	4.89E-02	6.13E-02	7.72E-03	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Styrene	2.90E-03	b	ADTFP	8.21E+02	7.05E-02	8.89E-02	1.12E-02	TR 653 Table 18 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Terpenes	6.30E-02	b	ADTFP	1.33E+04	1.54E+00	1.93E+00	2.43E-01	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Tetrahydrofuran	4.00E-03	b	ADTFP	8.50E+02	9.77E-02	1.23E-01	1.54E-02	TR 653 Table 18 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Toluene	3.30E-04	b	ADTFP	7.06E+01	8.06E-03	1.01E-02	1.27E-03	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Xylene (m,p-)	9.40E-04	b	ADTFP	2.01E+02	2.30E-02	2.88E-02	3.63E-03	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Pulp Dryer	Finished Pulp from Dryer	Xylene (o-)	1.40E-03	b	ADTFP	3.08E+02	3.42E-02	4.29E-02	5.40E-03	TR 653 Table 19 - Air Toxic Emissions from Kraft Paper Machines and Pulp Dryers, Median or Mean Data.
Small Dissolving Tank	Black Liquor Solids	1,1,1-Trichloroethane	5.90E-07	b	ton BLS	2.28E-01	2.57E-05	3.22E-05	4.05E-06	TR 653, Table 17A - (SDH average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	1,1,2-Trichloroethane	6.70E-08	b	ton BLS	2.65E+00	2.91E-04	3.65E-04	4.60E-05	TR 653, Table 17A - (SDH average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	1,2,4-Trichlorobenzene	2.60E-05	b	ton BLS	8.91E+00	1.13E-03	1.42E-03	1.79E-04	TR 653, Table 17A - (SDH average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.

TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/hr)	Hourly Emissions (lb/hr)	Hourly Emissions (g/s)	Data Source
Small Dissolving Tank	Black Liquor Solids	1,2-Dichloroethane	1.90E-05	lb	ton BLS	6.88E+00	7.83E-04	9.81E-04	1.24E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	2,5-Dimethyl Benzothiole	1.50E-05	lb	ton BLS	5.72E+00	6.52E-04	8.18E-04	1.03E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	2-Chloro-1,3-Butadiene	1.80E-05	lb	ton BLS	6.66E+00	7.63E-04	9.81E-04	1.24E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	2-Methylpyridine	3.90E-05	lb	ton BLS	1.48E+01	1.70E-03	2.13E-03	2.68E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	3-Carene	7.70E-05	lb	ton BLS	2.93E+03	3.35E-01	4.20E-01	5.25E-02	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Acetaldehyde	9.00E-04	lb	ton BLS	3.43E+02	3.91E-02	4.91E-02	6.18E-03	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Axetone	1.40E-03	lb	ton BLS	5.33E+02	6.08E-02	7.63E-02	9.62E-03	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Axetone	7.50E-05	lb	ton BLS	2.86E+00	3.28E-04	4.09E-04	5.15E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	alpha Terphenyl	1.50E-03	lb	ton BLS	5.72E+02	6.52E-02	8.18E-02	1.03E-02	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Alpha-pinene	4.90E-06	lb	ton BLS	1.75E+00	2.00E-04	2.51E-04	3.16E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Ammonia	1.20E-01	lb	ton BLS	4.97E+04	5.22E+00	6.54E+00	8.24E-01	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Benzothiole	8.90E-05	lb	ton BLS	3.30E+01	3.87E-03	4.85E-03	6.11E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Benzene	5.50E-07	lb	ton BLS	2.10E-01	2.35E-05	3.00E-05	3.78E-06	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Benzyl Alcohol	3.00E-03	lb	ton BLS	1.14E+03	1.30E-01	1.64E-01	2.06E-02	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Beta-pinene	1.10E-05	lb	ton BLS	4.15E+00	4.78E-04	6.00E-04	7.55E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Bis(2-ethylhexyl)phthalate	1.00E-05	lb	ton BLS	3.81E+00	4.36E-04	5.45E-04	6.87E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Bismethylenethiophene	8.30E-05	lb	ton BLS	3.16E+01	3.61E-03	4.52E-03	5.70E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Bromomethane	1.90E-05	lb	ton BLS	4.95E+00	5.69E-04	7.09E-04	8.93E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Chlorobenzene	2.00E-06	lb	ton BLS	7.62E-01	8.70E-05	1.09E-04	1.37E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Chloroform	2.30E-06	lb	ton BLS	8.70E-01	1.00E-04	1.25E-04	1.58E-05	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Chloromethane	1.10E-04	lb	ton BLS	4.19E+01	4.78E-03	6.00E-03	7.55E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Crotonaldehyde	1.30E-04	lb	ton BLS	4.95E+01	5.65E-03	7.09E-03	8.93E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Cumene	2.90E-07	lb	ton BLS	1.11E-01	1.28E-05	1.58E-05	1.99E-06	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Cymene (p-)	1.50E-05	lb	ton BLS	5.72E+00	6.52E-04	8.18E-04	1.03E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Di-n-butyl phthalate	2.50E-04	lb	ton BLS	9.53E+01	1.09E-02	1.36E-02	1.72E-03	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Ethanol	1.80E-04	lb	ton BLS	6.86E+01	7.83E-03	9.81E-03	1.24E-03	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Ethyl Benzene	1.50E-08	lb	ton BLS	5.72E-03	6.52E-07	8.18E-07	1.03E-07	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Formaldehyde	3.50E-03	lb	ton BLS	1.33E+03	1.52E-01	1.91E-01	2.40E-02	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Heptachlorocyclopentadiene	1.10E-04	lb	ton BLS	4.19E+01	4.78E-03	6.00E-03	7.55E-04	TB 859, Table 17A - (8Dln average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.

TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/d)	Hourly Emissions (lb/hr)	Hourly Emissions (lb)	Data Source
Small Dissolving Tank	Black Liquor Solids	Hexachlorocyclopentadiene	2.00E-04	lb	ton BLS	7.65E+01	8.70E-03	1.09E-02	1.37E-03	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Isocyanate	4.20E-06	lb	ton BLS	1.60E+00	1.93E-04	2.29E-04	2.89E-05	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Isocyanatidehyde	2.10E-04	lb	ton BLS	8.00E+01	9.13E-03	1.14E-02	1.44E-03	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Methanol	1.10E-02	lb	ton BLS	4.19E+03	4.78E-01	6.00E-01	7.59E-02	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Methyl ethyl ketone	1.40E-06	lb	ton BLS	6.33E-01	6.09E-05	7.63E-05	9.62E-06	TB 658, Table 17A - (NOR-PLOT average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Methyl isobutyl ketone	3.00E-07	lb	ton BLS	1.14E-01	1.30E-05	1.64E-05	2.08E-06	TB 658, Table 17A - (NOR-PLOT average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Methylene Chloride	8.30E-07	lb	ton BLS	3.16E-01	3.61E-05	4.52E-05	5.70E-06	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Naphthalene	5.00E-04	lb	ton BLS	1.91E+02	2.17E-02	2.73E-02	3.43E-03	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	n-Butylaldehyde	4.80E-04	lb	ton BLS	1.79E+02	2.00E-02	2.51E-02	3.16E-03	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	n-Heptane	5.90E-07	lb	ton BLS	2.23E-01	2.57E-05	3.22E-05	4.03E-06	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Styrene	1.20E-04	lb	ton BLS	4.57E+01	5.22E-03	6.54E-03	8.24E-04	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Terpenes	3.50E-04	lb	ton BLS	1.33E+02	1.52E-02	1.91E-02	2.40E-03	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Tetrahydrofuran	3.70E-06	lb	ton BLS	1.41E+00	1.61E-04	2.02E-04	2.54E-05	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Toluene	4.50E-05	lb	ton BLS	1.73E+01	2.00E-03	2.51E-03	3.13E-04	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Toluene	4.00E-05	lb	ton BLS	1.52E+01	1.74E-03	2.18E-03	2.73E-04	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Toluene	1.80E-06	lb	ton BLS	6.86E-01	7.83E-05	9.81E-05	1.24E-05	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Trichloroethylene	1.50E-05	lb	ton BLS	5.72E+00	6.52E-04	8.18E-04	1.02E-04	TB 658, Table 17A - (SDIn average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Trichlorofluoromethane	3.70E-05	lb	ton BLS	1.41E+01	1.61E-03	2.02E-03	2.54E-04	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Valeraldehyde	5.80E-04	lb	ton BLS	2.21E+02	2.52E-02	3.16E-02	3.98E-03	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Vinyl acetate	4.40E-05	lb	ton BLS	1.68E+01	1.91E-03	2.40E-03	3.02E-04	TB 658, Table 17A - Median Data, Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Xylene (m,p-)	4.70E-06	lb	ton BLS	1.79E-02	2.04E-06	2.59E-06	3.23E-07	TB 658, Table 17A - (NOR-PLOT average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Small Dissolving Tank	Black Liquor Solids	Xylene (o-)	1.90E-07	lb	ton BLS	7.24E-02	8.28E-06	1.04E-05	1.31E-06	TB 658, Table 17A - (NOR-PLOT average), Summary of Air Toxic Emissions from Kraft Small Dissolving Tanks.
Line Kdn	Line Produced	1,2,4-Trichlorobenzene	1.30E-04	lb	ton CaO	8.07E+00	9.21E-04	1.15E-03	1.45E-04	TB 658 Table 16A - Air Toxic Emissions from Kraft Line Kdn, SDIn average.
Line Kdn	Line Produced	Araldite	2.10E-05	lb	ton CaO	1.30E+00	1.49E-04	1.87E-04	2.35E-05	TB 658 Table 16A - Air Toxic Emissions from Kraft Line Kdn, NOR-PLOT average.
Line Kdn	Line Produced	Alkylphenol	2.20E-05	lb	ton CaO	1.37E+00	1.58E-04	1.95E-04	2.48E-05	TB 658 Table 16A - Air Toxic Emissions from Kraft Line Kdn, SDIn average.
Line Kdn	Line Produced	Benzene	3.30E-04	lb	ton CaO	2.06E+01	2.34E-03	2.93E-03	3.69E-04	TB 658 Table 16A - Air Toxic Emissions from Kraft Line Kdn, NOR-PLOT average.
Line Kdn	Line Produced	Bisphenol A	9.80E-06	lb	ton CaO	5.08E-01	6.95E-05	8.70E-05	1.10E-05	TB 658 Table 16A - Air Toxic Emissions from Kraft Line Kdn, SDIn average.
Line Kdn	Line Produced	Bromodichloromethane	8.70E-06	lb	ton CaO	5.40E-01	6.17E-05	7.73E-05	9.74E-06	TB 658 Table 16A - Air Toxic Emissions from Kraft Line Kdn, SDIn average.

TABLE A1  
Hazardous Air Pollutants - Volatile Organic Compounds

Line	Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)	Hourly Emissions (g/s)	Data Source
Line K1n	Line Produced		Bromomethane	1.00E-04	lb	ton CaO	9.03E+00	1.42E-03	1.79E-04	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Chlorobenzene	1.10E-05	lb	ton CaO	6.03E-01	7.80E-05	1.23E-05	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Chloroform	3.60E-08	lb	ton CaO	2.23E-01	2.59E-05	4.03E-06	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Chloromethane	1.70E-03	lb	ton CaO	1.06E+02	1.20E-02	1.90E-03	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Cumene (n,p-)	3.30E-06	lb	ton CaO	2.05E-01	2.34E-05	3.69E-06	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Ethanol	1.10E-02	lb	ton CaO	6.03E+02	7.80E-02	1.23E-02	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Formaldehyde	1.00E-03	lb	ton CaO	9.03E+01	1.42E-02	1.79E-03	HBH, Kelly International, Ltd., Emission Test Report (June 1995), pg 3. Average of runs 1, 2, 3, and 3d (0.070, 0.063, 0.103, 0.027) in both at a bleach plant pulping rate of 630 ADTP/day on May 10, 1995. All results nondetected, detection limits.
Line K1n	Line Produced		Isopropanol	8.70E-04	lb	ton CaO	5.40E+01	6.17E-03	9.74E-04	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Methanol	2.91E-03	lb	ton CaO	1.59E+02	1.70E-02	2.61E-03	HBH, Kelly International, Ltd., Emission Test Report (June 1995), pg 3. Average of runs 1, 2, 3, and 3d (0.070, 0.063, 0.103, 0.027) in both at a bleach plant pulping rate of 630 ADTP/day on May 10, 1995. All results nondetected, detection limits.
Line K1n	Line Produced		Methyl ethyl ketone	2.51E-03	lb	ton CaO	1.55E+02	1.70E-02	2.61E-03	HBH, Kelly International, Ltd., Emission Test Report (June 1995), pg 3. Average of runs 1, 2, 3, and 3d (0.070, 0.063, 0.103, 0.027) in both at a bleach plant pulping rate of 630 ADTP/day on May 10, 1995. All results nondetected, detection limits.
Line K1n	Line Produced		Methyl isobutyl ketone	2.00E-04	lb	ton CaO	1.24E+01	1.42E-03	2.24E-04	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Methylphenyl ketone	4.20E-06	lb	ton CaO	2.61E-01	2.98E-05	4.70E-06	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Naphthalene	1.30E-02	lb	ton CaO	8.07E+02	9.21E-02	1.45E-01	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		n-Heptane	2.10E-05	lb	ton CaO	1.30E+00	1.48E-04	2.35E-05	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Pinene	2.70E-04	lb	ton CaO	1.68E+01	1.91E-03	3.02E-04	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Styrene	5.70E-05	lb	ton CaO	3.54E+00	4.04E-04	6.39E-05	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Terpene	2.80E-02	lb	ton CaO	1.00E+03	2.08E-01	3.25E-02	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Tetrachloroethylene	2.60E-04	lb	ton CaO	1.61E+01	1.84E-03	2.91E-04	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Toluene	1.50E-05	lb	ton CaO	9.31E-01	1.06E-04	1.69E-05	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Trichloroethylene	4.20E-05	lb	ton CaO	2.61E+00	2.98E-04	4.70E-05	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Xylene (m,p-)	6.80E-06	lb	ton CaO	4.22E-01	4.92E-05	7.61E-06	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Line Produced		Xylene (o-)	2.10E-04	lb	ton CaO	1.30E+01	1.49E-03	2.35E-04	TB 653 Table 16A - Air Toxic Emissions from Kraft Line K1n, median value.
Line K1n	Pulp Produced		Acetaldehyde	2.61E-03	lb	ADTP	6.37E+02	7.69E-02	9.69E-03	HBH, Kelly International, Ltd., Emission Test Report (June 1995), pg 3. Average of runs 1, 2, 3, and 3d (0.070, 0.063, 0.103, 0.027) in both at a bleach plant pulping rate of 630 ADTP/day on May 10, 1995. All results nondetected, detection limits.
Line K1n	Pulp Produced		Acetone	2.51E-03	lb	ADTP	5.37E+02	7.69E-02	9.69E-03	HBH, Kelly International, Ltd., Emission Test Report (June 1995), pg 3. Average of runs 1, 2, 3, and 3d (0.070, 0.063, 0.103, 0.027) in both at a bleach plant pulping rate of 630 ADTP/day on May 10, 1995. All results nondetected, detection limits.

TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/hr)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)	Data Source
Line Mud Precast Filter and Drags Filter	Line Produced	1,2,4-Trichlorobenzene	3.30E-04	b	ton CaO	2.09E+01	2.34E-03	2.93E-03	3.69E-04	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	1,2-Dichloroethylene	2.80E-05	b	ton CaO	1.74E+00	1.88E-04	2.49E-04	3.13E-05	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Acetone	2.00E-04	b	ton CaO	1.24E+01	1.42E-03	1.78E-03	2.24E-04	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Acetone	1.10E-03	b	ton CaO	6.83E+01	7.80E-03	9.77E-03	1.23E-03	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Chloroform	7.10E-05	b	ton CaO	4.41E+00	5.03E-04	6.31E-04	7.95E-05	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Methanol	1.80E-02	b	ton CaO	1.12E+03	1.28E-01	1.60E-01	2.01E-02	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Methyl ethyl ketone	4.50E-04	b	ton CaO	3.04E+01	3.47E-03	4.35E-03	5.49E-04	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Methyl isobutyl ketone	7.80E-05	b	ton CaO	4.72E+00	5.39E-04	6.75E-04	8.50E-05	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Solvents	2.40E-05	b	ton CaO	1.49E+00	1.70E-04	2.13E-04	2.68E-05	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Terpenes	5.00E-03	b	ton CaO	3.10E+02	3.54E-02	4.44E-02	5.60E-03	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Toluene	8.10E-08	b	ton CaO	5.03E-01	5.74E-05	7.19E-05	9.08E-06	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Xylene (m,p)	1.80E-05	b	ton CaO	9.31E-01	1.06E-04	1.33E-04	1.68E-05	TB 858 Table A-17, median value.
Vacuum Pumps	Line Produced	Xylene (o)	2.30E-05	b	ton CaO	1.43E+00	1.63E-04	2.04E-04	2.57E-05	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	1,1,1-Trichloroethane	2.20E-05	b	ton CaO	1.37E+00	1.56E-04	1.95E-04	2.43E-05	TB 858 Table A-17, SDN average.
Line Mud Precast Filters	Line Produced	Acetone	1.00E-03	b	ton CaO	6.33E+01	7.30E-03	9.17E-03	1.15E-03	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Acetone	6.50E-04	b	ton CaO	4.01E+01	4.61E-03	5.77E-03	7.27E-04	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Acetone	5.30E-05	b	ton CaO	3.29E+00	3.78E-04	4.71E-04	5.93E-05	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Benzene	6.20E-06	b	ton CaO	3.23E-01	3.69E-05	4.62E-05	5.82E-06	TB 858 Table A-17, SDN average.
Line Mud Precast Filters	Line Produced	Chlorobenzene	1.90E-05	b	ton CaO	1.18E+00	1.36E-04	1.69E-04	2.13E-05	TB 858 Table A-17, SDN average.
Line Mud Precast Filters	Line Produced	Formaldehyde	2.10E-04	b	ton CaO	1.30E+01	1.48E-03	1.87E-03	2.35E-04	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Methanol	1.10E-02	b	ton CaO	6.93E+02	7.80E-02	9.77E-02	1.23E-02	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Methyl ethyl ketone	1.50E-04	b	ton CaO	9.31E+00	1.06E-03	1.33E-03	1.68E-04	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Methyl isobutyl ketone	9.20E-05	b	ton CaO	5.71E+00	6.62E-04	8.37E-04	1.05E-04	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Solvents	3.70E-05	b	ton CaO	2.30E+00	2.62E-04	3.29E-04	4.14E-05	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Terpenes	2.70E-03	b	ton CaO	1.69E+02	1.91E-02	2.40E-02	3.02E-03	TB 858 Table A-17, median value.
Line Mud Precast Filters	Line Produced	Tetrachloroethylene	4.70E-06	b	ton CaO	2.92E-01	3.33E-05	4.17E-05	5.28E-06	TB 858 Table A-17, SDN average.
Line Mud Precast Filters	Line Produced	Toluene	6.50E-05	b	ton CaO	4.28E+00	4.89E-04	6.13E-04	7.72E-05	TB 858 Table A-17, SDN average.
Line Mud Precast Filters	Line Produced	Xylene (m,p)	2.80E-05	b	ton CaO	1.74E+00	1.98E-04	2.49E-04	3.13E-05	TB 858 Table A-17, SDN average.
Line Mud Precast Filters	Line Produced	Xylene (o)	5.00E-05	b	ton CaO	3.40E+00	3.94E-04	4.94E-04	6.19E-05	TB 858 Table A-17, median value.
Line Mud Tanks (2)	Line Produced	Acetone	4.91E-04	b	ton CaO	3.05E+01	3.48E-03	4.36E-03	5.49E-04	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Line Mud Tanks (2)	Line Produced	Acetone	4.93E-03	b	ton CaO	3.05E+02	3.48E-02	4.36E-02	5.52E-03	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Line Mud Tanks (2)	Line Produced	Benzene	3.56E-05	b	ton CaO	2.21E+00	2.52E-04	3.16E-04	3.98E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.

TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)	Hourly Emissions (lb/hr)	Hourly Emissions (ton/hr)	Data Source
Lime Mud Tanks (5)	Lime Produced	Methanol	2.37E-01	b	ton CaO	1.47E+04	1.68E+00	2.10E+00	2.69E-01	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Methyl ethyl ketone	6.44E-04	b	ton CaO	4.00E+01	4.56E-03	5.72E-03	7.21E-04	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Methyl isobutyl ketone	3.17E-05	b	ton CaO	1.97E+00	2.25E-04	2.82E-04	3.55E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Styrene	2.40E-04	b	ton CaO	1.54E+01	1.76E-03	2.20E-03	2.78E-04	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Terpene	1.90E-02	b	ton CaO	1.18E+03	1.35E-01	1.69E-01	2.13E-02	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Toluene	8.69E-05	b	ton CaO	5.52E+00	6.30E-04	7.90E-04	9.95E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Xylene (m,p)	4.13E-05	b	ton CaO	2.55E+00	2.93E-04	3.67E-04	4.62E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Lime Mud Tanks (5)	Lime Produced	Xylene (o)	5.37E-05	b	ton CaO	3.33E+00	3.81E-04	4.77E-04	6.01E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	1,2,4-Trichlorobenzene	3.80E-05	b	ton CaO	2.42E+00	2.76E-04	3.48E-04	4.36E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	1,2-Dichloroethane	3.80E-04	b	ton CaO	2.36E+01	2.69E-03	3.37E-03	4.25E-04	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Acetaldehyde	2.10E-02	b	ton CaO	1.30E+03	1.48E-01	1.87E-01	2.35E-02	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Acetone	9.40E-03	b	ton CaO	5.64E+02	6.68E-02	8.39E-02	1.05E-02	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Acrolein	1.40E-05	b	ton CaO	8.69E-01	9.92E-05	1.24E-04	1.57E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Ammonia	5.40E-01	b	ton CaO	3.36E+04	3.83E+00	4.80E+00	6.04E-01	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Benzene	1.80E-05	b	ton CaO	1.12E+00	1.28E-04	1.60E-04	2.01E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Methanol	1.00E-01	b	ton CaO	6.21E+03	7.09E-01	8.88E-01	1.12E-01	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Methyl ethyl ketone	8.00E-04	b	ton CaO	5.59E+01	6.38E-03	7.99E-03	1.01E-03	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Methyl isobutyl ketone	4.90E-05	b	ton CaO	3.04E+00	3.47E-04	4.35E-04	5.48E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Styrene	4.00E-04	b	ton CaO	2.48E+01	2.83E-03	3.58E-03	4.48E-04	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.
Slakers and Causidizing Tanks	Lime Produced	Terpene	7.00E-03	b	ton CaO	4.35E+02	4.98E-02	6.22E-02	7.83E-03	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995), Average of Source Codes: DCA3 and DCA4. Data indicated as unexpected (U) or nondetected (N) is not included in this average. Average factor multiplied by 5 to account for emissions from 5 identical sources.



TABLE A.1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)	Data Source
Green Liquor Surge Tank	Line Produced	Acetone	6.57E-05	lb	ton CaO	4.08E+00	4.89E-04	5.93E-04	7.35E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Benzene	4.70E-08	lb	ton CaO	2.92E-01	3.33E-05	4.17E-05	5.26E-06	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Methanol	1.08E-03	lb	ton CaO	6.70E+01	7.85E-03	9.85E-03	1.21E-03	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Methyl ethyl ketone	2.00E-05	lb	ton CaO	1.24E+00	1.42E-04	1.78E-04	2.24E-05	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Methyl isobutyl ketone	2.91E-06	lb	ton CaO	1.81E-01	2.06E-05	2.58E-05	3.25E-06	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	n-Heptane	1.12E-08	lb	ton CaO	6.95E-02	7.94E-06	9.95E-06	1.25E-06	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Terpenes	1.17E-03	lb	ton CaO	7.26E+01	8.28E-03	1.04E-02	1.31E-03	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Toluene	3.20E-08	lb	ton CaO	1.99E-01	2.27E-05	2.84E-05	3.58E-06	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Green Liquor Surge Tank	Line Produced	Xylene (o-)	3.39E-07	lb	ton CaO	2.10E-02	2.40E-06	3.01E-06	3.79E-07	NCASI, MACT Data Summary, MACTDATA.XLS, (January 1995). Average of Source Codes: OV7. Data indicated as unexpected (U) or nondetected (N) is not included in this average.
Recovery Boiler	Black Liquor Solids	1,2,4-Trichlorobenzene	7.70E-04	lb	ton BLS	2.93E+02	3.35E-02	4.20E-02	5.29E-03	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Acetaldehyde	6.50E-03	lb	ton BLS	2.10E+03	2.39E-01	3.00E-01	3.78E-02	Hartman, Kelly International, Ltd., Emission Test Report (June 1995), pg. 3. Average of runs 1, 2, 3, and 3d (0.310, 0.325, 0.304, 0.305) in boiler at a BLS firing rate of 1358.75 on May 11, 1995. All results nondetected, detection limits used.
Recovery Boiler	Black Liquor Solids	Acetone	5.50E-03	lb	ton BLS	2.10E+03	2.39E-01	3.00E-01	3.78E-02	Hartman, Kelly International, Ltd., Emission Test Report (June 1995), pg. 3. Average of runs 1, 2, 3, and 3d (0.310, 0.325, 0.304, 0.305) in boiler at a BLS firing rate of 1358.75 on May 11, 1995. All results nondetected, detection limits used.
Recovery Boiler	Black Liquor Solids	Alpha pinene	1.70E-03	lb	ton BLS	6.48E+02	7.39E-02	9.27E-02	1.17E-02	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Benzaldehyde	7.00E-03	lb	ton BLS	2.67E+03	3.04E-01	3.82E-01	4.81E-02	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Benzene	6.40E-04	lb	ton BLS	2.44E+02	2.78E-02	3.49E-02	4.40E-03	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Beta-pinene	9.80E-04	lb	ton BLS	3.73E+02	4.28E-02	5.34E-02	6.73E-03	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Chloroform	2.40E-05	lb	ton BLS	9.16E+00	1.04E-03	1.31E-03	1.65E-04	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Cymene (p-)	1.20E-03	lb	ton BLS	4.57E+02	5.22E-02	6.54E-02	8.24E-03	TB 658 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDH average.
Recovery Boiler	Black Liquor Solids	Formaldehyde	7.80E-03	lb	ton BLS	2.97E+03	3.39E-01	4.25E-01	5.36E-02	Hartman, Kelly International, Ltd., Emission Test Report (June 1995), pg. 3. Average of runs 1, 2, 3, and 3d (0.199, 0.203, 0.195, 0.197) in boiler at a BLS firing rate of 1358.75 on May 11, 1995. All results nondetected, detection limits used.
Recovery Boiler	Black Liquor Solids	Methanol	6.50E-03	lb	ton BLS	2.10E+03	2.39E-01	3.00E-01	3.78E-02	Hartman, Kelly International, Ltd., Emission Test Report (June 1995), pg. 3. Average of runs 1, 2, 3, and 3d (0.310, 0.325, 0.304, 0.305) in boiler at a BLS firing rate of 1358.75 on May 11, 1995. All results nondetected, detection limits used.

TABLE A-1  
Hazardous Air Pollutants - Volatile Organic Compounds

Source	Parameter	Pollutant	Emission Factor (EF)	EF Numerator Unit	EF Denominator Unit	Annual Emissions (lb/yr)	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)	Data Source
Recovery Boiler	Black Liquor Solids	Methyl ethyl ketone	5.90E-03	lb	ton BLS	2.10E+03	2.35E+01	3.00E-01	3.78E-02	Haitman, Kelly International, Ltd., Emissions Test Report (June 1995), pg 3. Averages of runs 1, 2, 3, and 34 (0.310, 0.325, 0.304, 0.306) in lb/hr at a BLS firing rate of 1356.75 on May 11, 1993. All results nondetected, detection limits used.
Recovery Boiler	Black Liquor Solids	Methyl isobutyl ketone	3.30E-05	lb	ton BLS	1.28E+01	1.44E-03	1.80E-03	2.27E-04	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, Median Data.
Recovery Boiler	Black Liquor Solids	Methylcyclohexane	4.80E-04	lb	ton BLS	1.63E+02	2.09E-02	2.62E-02	3.30E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, Median Data.
Recovery Boiler	Black Liquor Solids	Naphthalene	2.60E-04	lb	ton BLS	9.81E+01	1.13E-02	1.42E-02	1.79E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, Median Data.
Recovery Boiler	Black Liquor Solids	n-Hexane	2.40E-04	lb	ton BLS	9.16E+01	1.04E-02	1.31E-02	1.65E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDN average.
Recovery Boiler	Black Liquor Solids	Styrene	5.60E-04	lb	ton BLS	2.13E+02	2.44E-02	3.05E-02	3.85E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, Median Data.
Recovery Boiler	Black Liquor Solids	Toluenes	3.40E-02	lb	ton BLS	1.30E+04	1.40E+00	1.85E+00	2.34E-01	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, Median Data.
Recovery Boiler	Black Liquor Solids	Tetramethylethylene	4.60E-04	lb	ton BLS	1.83E+02	2.09E-02	2.62E-02	3.30E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, SDN average.
Recovery Boiler	Black Liquor Solids	Toluene	3.30E-05	lb	ton BLS	1.28E+01	1.44E-03	1.80E-03	2.27E-04	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, NOR-PLOT average.
Recovery Boiler	Black Liquor Solids	Xylene (m,p-)	1.80E-04	lb	ton BLS	6.88E+01	7.83E-03	9.81E-03	1.24E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, NOR-PLOT average.
Recovery Boiler	Black Liquor Solids	Xylene (o-)	3.30E-04	lb	ton BLS	1.26E+02	1.44E-02	1.80E-02	2.27E-03	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, NOR-PLOT average.
Recovery Boiler	Black Liquor Solids	Xylenes	5.40E-05	lb	ton BLS	2.08E+01	2.35E-03	2.94E-03	3.71E-04	TB 653 Table 14A - Air Toxic Emissions from Kraft NDCE Recovery Furnaces, (sum of xylenes isomers).

TABLE A-3

Health Risk Assessment Emission Sources and Toxic Emissions

Source ID	Source Description	Chemical	CAS	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)
Source 13	High-density Tanks - 1	1,1,2-Trichloroethane	79005	1,008E-01	1,200E-05
		1,2-Dichloroethylene <sup>a</sup>	540590	1,226E+00	1,460E-04
		Acetaldehyde	75070	8,736E+01	1,040E-02
		Benzene	71432	7,224E-02	8,600E-06
		Chlorobenzene	108907	2,016E-02	2,400E-06
		Chloroform	67663	1,848E+02	2,200E-02
		Crotonaldehyde <sup>a</sup>	4170303	4,704E+00	5,600E-04
		Methanol	67561	4,032E+03	4,800E-01
		Methyl ethyl ketone <sup>a</sup>	78933	1,848E+02	2,200E-02
		Methyl isobutyl ketone <sup>a</sup>	108101	1,848E-01	2,200E-05
		n-Hexane	110543	3,360E-01	4,000E-05
		Phenol <sup>a</sup>	108952	3,192E+02	3,800E-02
		Styrene	100425	4,536E+00	5,400E-04
		Tetrachloroethylene	127184	1,058E+00	1,260E-04
		Toluene	108883	1,445E-01	1,720E-05
		Trichloroethylene	79016	8,736E-02	1,040E-05
		Xylene (m,p-)	108383	1,092E-01	1,300E-05
		Xylene (o-)	95476	3,024E-02	3,600E-06
Source 23	High-density Tanks - 2	1,1,2-Trichloroethane	79005	1,008E-01	1,200E-05
		1,2-Dichloroethylene <sup>a</sup>	540590	1,226E+00	1,460E-04
		Acetaldehyde	75070	8,736E+01	1,040E-02
		Benzene	71432	7,224E-02	8,600E-06
		Chlorobenzene	108907	2,016E-02	2,400E-06
		Chloroform	67663	1,848E+02	2,200E-02
		Crotonaldehyde <sup>a</sup>	4170303	4,704E+00	5,600E-04
		Methanol	67561	4,032E+03	4,800E-01
		Methyl ethyl ketone <sup>a</sup>	78933	1,848E+02	2,200E-02
		Methyl isobutyl ketone <sup>a</sup>	108101	1,848E-01	2,200E-05
		n-Hexane	110543	3,360E-01	4,000E-05
		Phenol <sup>a</sup>	108952	3,192E+02	3,800E-02
		Styrene	100425	4,536E+00	5,400E-04
		Tetrachloroethylene	127184	1,058E+00	1,260E-04
		Toluene	108883	1,445E-01	1,720E-05
		Trichloroethylene	79016	8,736E-02	1,040E-05
		Xylene (m,p-)	108383	1,092E-01	1,300E-05
		Xylene (o-)	95476	3,024E-02	3,600E-06
Source 17	Second PO Washer Seal Tank	Acetaldehyde	75070	5,480E+01	7,840E-03
		Chloroform	67663	3,220E-02	4,608E-06
		Formaldehyde	50000	1,287E-01	1,813E-05
		Methanol	67561	1,224E+03	1,752E-01
		Methyl ethyl ketone	78933	4,281E+00	6,125E-04
		Styrene	100425	1,162E+00	1,663E-04
		Xylenes	1210	7,385E-01	1,057E-04
		Acetaldehyde	75070	1,045E+01	1,495E-03
		Chloroform	67663	2,252E-02	3,222E-06
		Formaldehyde	50000	1,323E-01	1,893E-05
Source 43	NCG Incinerator	Methanol	67561	1,113E+01	1,593E-03
		Methyl ethyl ketone	78933	1,284E+01	1,838E-03
		1,2,4-Trichlorobenzene <sup>a</sup>	120821	5,352E+00	7,656E-04

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TABLE A-3  
Health Risk Assessment Emission Sources and Toxic Emissions

Source ID	Source Description	Chemical	CAS	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)
Source 20	Combined Bleach Plant and Second PO Hoods	1,2-Dichloroethylene <sup>a</sup>	540590	3.639E+01	5.206E-03
		Acetaldehyde	75070	5.138E+01	7.350E-03
		Benzene	71432	6.422E+01	9.188E-03
		Carbon Tetrachloride	56235	1.606E+01	2.297E-03
		Formaldehyde	50000	4.281E+01	6.125E-03
		Methanol	67561	1.498E+03	2.144E-01
		Methyl ethyl ketone	78933	1.798E+01	2.573E-03
		n-Hexane	110543	1.306E+01	1.868E-03
		Styrene	100425	4.067E-01	5.819E-05
		Xylene (m,p-)	108383	9.633E+00	1.378E-03
		Xylene (o-)	95476	1.306E+01	1.868E-03
		Acetaldehyde	75070	4.710E+02	6.738E-02
		Chloroform	67663	1.096E+00	1.568E-04
		Formaldehyde	50000	1.764E+01	2.524E-03
		Methanol	67561	4.410E+02	6.309E-02
Source 22	EOP Seal Tank Vent	Methyl ethyl ketone	78933	4.710E+02	6.738E-02
		Acetaldehyde	75070	3.866E+01	5.537E-03
		Chloroform	67663	3.173E-01	4.539E-05
		Formaldehyde	50000	2.432E-01	3.479E-05
		Methanol	67561	6.979E+02	9.984E-02
		Methyl ethyl ketone	78933	9.419E+00	1.348E-03
		1,2,4-Trichlorobenzene <sup>a</sup>	120821	2.569E+03	3.675E-01
		Acetaldehyde	75070	7.064E+03	1.011E+00
		Acrolein	107028	3.425E+02	4.900E-02
		Benzene	71432	1.370E+02	1.960E-02
Source 24	Pulp Dryer	Methanol	67561	1.520E+04	2.174E+00
		Methyl isobutyl ketone <sup>a</sup>	78933	5.138E+02	7.350E-02
		Methyl isobutyl ketone <sup>a</sup>	108101	4.281E+02	6.125E-02
		Styrene	100425	6.208E+02	8.881E-02
		Tetrachloroethylene	127184	8.563E+02	1.225E-01
		Toluene	108883	7.064E+01	1.011E-02
		Xylene (m,p-)	108383	2.012E+02	2.879E-02
		Xylene (o-)	95476	2.997E+02	4.288E-02
		1,1,1-Trichloroethane	71556	2.248E-01	3.216E-03
		1,1,2-Trichloroethane	79005	2.553E+00	3.652E-04
		1,2,4-Trichlorobenzene <sup>a</sup>	120821	9.907E+00	1.417E-03
		1,2-Dichloroethylene <sup>a</sup>	540590	6.859E+00	9.812E-04
		Acetaldehyde	75070	3.429E+02	4.906E-02
		Acrolein	107028	2.858E+00	4.088E-04
		Ammonia	7664417	4.573E+04	6.542E+00
		Benzene	71432	2.096E-01	2.998E-05
		Bis(2-ethylhexyl)phthalate	117817	3.810E+00	5.451E-04
		Bromodichloromethane <sup>a</sup>	75274	3.163E+01	4.525E-03
		Bromomethane	74839	4.954E+00	7.087E-04
		Chlorobenzene	108907	7.621E-01	1.090E-04
Source 33	Smelt Dissolving Tank	Chloroform	67663	8.764E-01	1.254E-04
		Chloromethane <sup>a</sup>	74873	4.191E+01	5.998E-03
		Crotonaldehyde <sup>a</sup>	4170303	4.954E+01	7.087E-03
		Cumene <sup>a</sup>	98828	1.105E-01	1.581E-05

TABLE A-3  
Health Risk Assessment Emission Sources and Toxic Emissions

Source ID	Source Description	Chemical	CAS	Annual Emissions (lb/yr)	Hourly Emissions (lb/hr)
Source 39	Slakers and Cauticizing Tanks	Xylene (m,p-)	108383	2,564E+00	3,668E-04
		Xylene (o-)	95476	3,334E+00	4,769E-04
		1,2,4-Trichlorobenzene <sup>a</sup>	120821	2,421E+00	3,464E-04
		Acetaldehyde	540590	2,359E+01	3,375E-03
		Acrolein	75070	1,304E+03	1,865E-01
		Ammonia	107028	8,691E-01	1,243E-04
		Benzene	7664417	3,352E+04	4,796E+00
		Methanol	71432	1,117E+00	1,599E-04
		Methyl ethyl ketone	67561	6,208E+03	8,881E-01
		Methyl isobutyl ketone <sup>a</sup>	78933	5,587E+01	7,993E-03
		Styrene	108101	3,042E+00	4,352E-04
		Tetrachloroethylene	100425	2,483E+01	3,553E-03
		Toluene	127184	1,490E+00	2,132E-04
		Xylene (m,p-)	108883	1,059E+01	1,510E-03
		Xylene (o-)	95476	2,545E+00	3,641E-04
		Acetaldehyde	75070	3,973E-01	5,684E-05
		Benzene	71432	3,849E+03	5,506E-01
Source 40	Green Liquor Clarifiers	Methanol	67561	3,508E+00	5,018E-04
		Methyl ethyl ketone	78933	1,670E+04	2,389E+00
		Methyl isobutyl ketone <sup>a</sup>	108101	2,452E+01	3,508E-03
		Styrene	100425	1,347E+00	1,927E-04
		Toluene	108883	1,384E+01	1,981E-03
		Xylene (m,p-)	108383	1,242E+00	1,776E-04
		Xylene (o-)	95476	2,390E+01	3,419E-03
		Acetaldehyde	75070	1,279E+00	1,830E-04
		Benzene	71432	3,625E+00	5,187E-04
		Methanol	67561	2,918E-01	4,174E-05
Source 41	Green Liquor Surge Tank	Methyl ethyl ketone	78933	6,705E+01	9,592E-03
		Methyl isobutyl ketone <sup>a</sup>	108101	1,242E+00	1,776E-04
		n-Hexane	110543	1,807E-01	2,584E-05
		Toluene	108883	6,953E-02	9,947E-06
		Xylene (o-)	95476	1,987E-01	2,842E-05
		1,2,4-Trichlorobenzene <sup>a</sup>	120821	2,105E-02	3,011E-06
		Acetaldehyde	75070	2,934E+02	4,197E-02
		Benzene	71432	2,066E+03	2,998E-01
		Chloroform	67663	2,439E+02	3,489E-02
		Formaldehyde	50000	9,145E+00	1,308E-03
Source 32	Recovery Boiler	Methanol	67561	2,972E+03	4,252E-01
		Methyl ethyl ketone	78933	2,098E+03	2,998E-01
		Methyl isobutyl ketone <sup>a</sup>	108101	2,096E+03	2,998E-01
		Methylene Chloride	75092	1,257E+01	1,799E-03
		Naphthalene	91203	1,829E+02	2,617E-02
		n-Hexane	110543	9,907E+01	1,417E-02
		Styrene	100425	9,145E+01	1,308E-02
		Tetrachloroethylene	127184	2,134E+02	3,053E-02
		Toluene	108883	1,829E+02	2,617E-02
		Xylene (m,p-)	108383	1,257E+01	1,799E-03
		Xylene (o-)	95476	6,859E+01	9,812E-03
		Acetaldehyde	75070	1,257E+02	1,799E-02
		Benzene	71432	2,066E+03	2,998E-01
		Chloroform	67663	2,439E+02	3,489E-02
		Formaldehyde	50000	9,145E+00	1,308E-03
		Methanol	67561	2,972E+03	4,252E-01
		Methyl ethyl ketone	78933	2,098E+03	2,998E-01
		Methyl isobutyl ketone <sup>a</sup>	108101	2,096E+03	2,998E-01

**Appendix B**  
**AERMOD and HARP Modeling Files for**  
**Evergreen Risk Assessment**

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## APPENDIX B

# AERMOD and HARP Modeling Files for Evergreen Risk Assessment

Table B-1 provides a summary of the files contained in the enclosed compact disk.

**TABLE B-1**  
**Modeling Files – Contents**

Type of File	File Name	Comments
<b>AERMOD Files</b>		
Input	9005_75m.dem	DEM terrain information for Eureka
	EP-HRA3_01_UNIT.DTA <sup>a</sup>	AERMOD input file for generic pollutant (UNIT)
Meteorological	EGWR01.PFL <sup>b</sup>	Vertical profile data
	EGWR01.SFC <sup>b</sup>	Surface observations
BPIP – Prime	EP-HRA3.PRW	BPIP input file
	EP-HRA3.SO	BPIP output file
	EP-HRA3.SUM	BPIP output file
	EP-HRA3.TAB	BPIP output file
Output	EP-HRA3_01_UNIT.LST <sup>a</sup>	AERMOD output file for generic pollutant (UNIT)
Summary	EP-HRA3_01_UNIT.USF <sup>a</sup>	AERMOD summary output file for generic pollutant (UNIT)
<b>AERMOD-HARP Transition Files</b>		
Source Parameters	EP_HARP_SOURCE.txt	Source parameters file for HARP input
Dispersion Factors I (X/Q)	EP_XOQ_HR-3_2001.xls <sup>c</sup>	All dispersion factors file (all sources, all receptors, all pollutants, per year)
Dispersion Factors II (X/Q)	EP_XOQ_HR-3_MAX_AVE_061023.xls	Dispersion factors digested file (Combined average and maximum values for long term and short term for all years)
Dispersion Factors III (X/Q)	EP_XOQ_HR-3_MAX_AVE_061023.txt	Dispersion factors for HARP input
<b>HARP Files</b>		
Source File	Evergreen.SRC	Source and receptor information for HARP input
XOQ File	Evergreen.XOQ	XOQ file, unit dispersion factors
Transaction File	Evergreen.tra	HARP transaction file, emission information
HARP Output File	Rep_Can_70yr_DerAdj_AllRec_AllSrc_AllCh_ByRec_Site.txt	Cancer risks by receptors (residential exposure)
HARP Output File	Rep_Can_70yr_DerAdj_Rec286_AllSrc_AllCh_ByRec_ByChem.txt	Cancer risks at MEIR location by chemicals

TABLE B-1  
Modeling Files – Contents

Type of File	File Name	Comments
HARP Output File	Rep_Can_70yr_DerAdj_Rec286_AllSrc_AllCh_BySrc.txt	Cancer risks at MEIR location by sources
HARP Output File	Rep_Can_WRK_Avg_AllRec_AllSrc_AllCh_ByRec.txt	Cancer risks by receptors (workers' exposure)
HARP Output File	Rep_Can_WRK_Avg_Rec278_AllSrc_AllCh_ByRec_ByChem.txt	Cancer risks at MEIW location by chemicals
HARP Output File	Rep_Can_WRK_Avg_Rec278_AllSrc_AllCh_BySrc.txt	Cancer risks at MEIW location by sources
HARP Output File	Rep_Chr_Wrk_PtEst_AllRec_AllSrc_AllCh_ByRec.txt	HIC by receptors (workers' exposure)
HARP Output File	Rep_Chr_Res_DerOEH_AllRec_AllSrc_AllCh_ByRec_Site.txt	HIC by receptors (residential exposure)
HARP Output File	Rep_Chr_Res_DerOEH_Rec286_AllSrc_AllCh_ByRec_ByChem.txt	HIC at MEIR location by chemicals
HARP Output File	Rep_Chr_Res_DerOEH_Rec286_AllSrc_AllCh_BySrc.txt	HIC at MEIR location by sources
HARP Output File	Rep_Chr_Wrk_PtEst_Rec278_AllSrc_AllCh_ByRec_ByChem.txt	HIC at MEIW by chemicals
HARP Output File	Rep_Chr_Wrk_PtEst_Rec278_AllSrc_AllCh_BySrc.txt	HIC at MEIW by sources
HARP Output File	Rep_Acu_AllRec_AllSrc_AllCh_ByRec_Site.txt	HIA by receptors
HARP Output File	Rep_Acu_Rec20_AllSrc_AllCh_ByRec_ByChem.txt	HIA at PMI location by chemicals
HARP output file	Rep_Acu_Rec20_AllSrc_AllCh_BySrc.txt	HIA at PMI location by source

<sup>a</sup>There are five files (for years 2001 – 2005). The year is represented in the numbers before "UNIT."

<sup>b</sup>There are a total of five files (years 2001 – 2005). The year is represented with two digits before the file extension.

<sup>c</sup>There are a total of five files (years 2001 – 2005). The year is represented with four digits before the file extension.

TABLE 5-4

Contribution of Toxic Air Contaminants to Cancer Risks and Chronic Hazard Index at the Maximum Exposed Receptors  
 Evergreen Pulp Human Health Risk Assessment

Health Risk	TAC	Contributions (%)	
		MEIR	MEIW
Cancer	✕ Chromium, Hexavalent (and compounds)	63.6	68.5
	✕ Acetaldehyde	24.5	20.6
	✕ Naphthalene	4.0	5.2
	✕ Perchloroethylene (Tetrachloroethene)	2.2	0.99
	✕ Benzene	2.1	1.2
Chronic Hazard Index	Acrolein	65.2	46.2
	✕ Acetaldehyde	25.5	34.1
	Ammonia	5.2	12.7
	✕ Formaldehyde	2.8	4.2
	✕ Nickel	0.6	1.1

TABLE 5-5

Contribution of Toxic Air Contaminants to Acute Hazard Index at the Maximum Exposed Receptors  
 Evergreen Pulp Human Health Risk Assessment

Health Risk	TAC	Contributions (%)
Acute Hazard Index (at PMI)	Acrolein	99.6
	Ammonia	0.19
	✕ Formaldehyde	0.17
	Phenol	0.007
	Methyl Ethyl Ketone (2-Butanone)	0.005

### 5.3 Conclusion

As shown in Table 5-1, the modeled cancer health risk at point of maximum impact (PMI) is above the threshold limits established by the California Air Toxics Hot Spots program. However, the PMI is near the facility property boundary, where there are no residences or workers that could be exposed. The nearest resident is 700 meters to the west of the PMI and the nearest worker is 750 meters to the north of the PMI. These locations represent the MEIR and the MEIW, respectively. At these locations, the cancer risk is well below the significance threshold, the hazard index for chronic exposures is below the significance threshold, and the health impacts for acute exposures is reduced by more than a factor of 2 compared to the PMI.

The cancer and chronic health risks associated with the Evergreen mill emissions are below the NCUAQMD significance thresholds for worst-case residential and worker exposure



California Regional Water Quality Control Board  
North Coast Region  
Geoffrey M. Hales, Chairman



Linda S. Adams  
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Arnold  
Schwarzenegger  
Governor

ORDER NO. R1-2010-0033  
NPDES NO. CA0005894  
WDID No. 1B77005OHUM

WASTE DISCHARGE REQUIREMENTS  
FOR FRESHWATER TISSUE COMPANY, SAMOA PULP MILL

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	Freshwater Tissue Company
Name of Facility	Samoa Pulp Mill
Facility Address	1 TCF Drive
	Samoa CA 95564
	Humboldt County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the owner from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	wastewater	40°, 48'49', 2810" N	124°, 42'13', 2432" W	Pacific Ocean

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	July 15, 2010
This Order shall become effective on:	July 15, 2010
This Order shall expire on:	July 15, 2015
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<b><u>180 days prior to the Order expiration date</u></b>

Freshwater Tissue Company.  
Samoa Pulp Mill  
ORDER NO. R1-2010-0033  
NPDES NO. CA0005894

IT IS HEREBY ORDERED, that, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Catherine Kuhlman, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on July 15, 2010.

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Catherine Kuhlman, Executive Officer

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## I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

**Table 4. Facility Information**

Discharger	Freshwater Tissue Company
Name of Facility	Samoa Pulp Mill
Facility Address	1 TCF Drive
	Samoa CA 95564
	Humboldt County
Facility Contact, Title, and Phone	Robert Simpson, President, (707) 441-2801
Mailing Address	PO Box 248, Samoa, CA 95564
Type of Facility	Pulp Mill
Facility Design Flow	20 million gallons per day

## II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds:

- A. Background.** Freshwater Tissue Company (hereinafter Discharger) submitted a Report of Waste Discharge, dated January 27, 2010, and applied for a NPDES permit to discharge approximately 13.6 millions gallons per day (MGD), on average, untreated wastewater generated from the production of kraft pulp at the Samoa Pulp Mill, hereinafter Facility. Additional information was submitted on February 16, 2010 and March 23, 2010, and the application fee was submitted on March 29, 2010. The application was deemed complete on March 29, 2010.

The discharge from the Facility was previously regulated pursuant to Board Order No. R1-2004-0047 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0005894 issued to Evergreen Pulp, Inc., a subsidiary of Lee & Man Paper Manufacturing Limited. The Facility ceased operation on October 17, 2008. On January 7, 2009, the Regional Water Board issued a Notice of Intent to terminate Board Order No. R1-2004-0047 in accordance with 40 CFR § 122.61(b) to prevent the automatic transfer of the existing NPDES permit from Evergreen Pulp, Inc. to a new owner of the Facility. On March 12, 2009, after due notice to Evergreen Pulp, Inc. and all other affected persons, the Regional Water Board conducted a public hearing at which time the Regional Water Board terminated Board Order No. R1-2004-0047.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

**B. Facility Description.** The Discharger ~~owns and operates~~acquired the Samoa Pulp Mill in February 2009 and plans to resume pulp production in December 2010. Wastewater created during the pulp production process, ~~the~~ and energy and chemical recovery processes, ~~and the water treatment plant is~~will be discharged from Discharge 001 (see table on cover page) to the Pacific Ocean, a water of the United States, through an outfall that is approximately 8,200 feet long and provides an initial dilution rate of 115:1. Attachment B provides a map of the area around the facility. Attachment C provides a flow schematic of the facility.

**C. Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

The CWA authorizes the USEPA to permit a state to serve as the NPDES permitting authority in lieu of the USEPA. The State of California has an in-lieu authority of the NPDES program. The State Water Resources Control Board (State Water Board) entered into a Memorandum of Agreement with the USEPA on September 22, 1989, to administer the NPDES program governing discharges to waters of the United States. The Porter-Cologne Water Quality Control Act authorizes the State Water Board, through the Regional Water Board, to regulate and control the discharge of pollutants to waters of the state.

**D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E are also incorporated into this Order.

**E. California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the CEQA, Public Resources Code sections 21100-21177.

**F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of

Federal Regulations<sup>1</sup> require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge of wastewater authorized by this Order must meet minimum federal technology-based requirements set out in Effluent Limitations Guidelines and Standards for the Pulp, Paper, and Paperboard Point Source Category in Part 430. Wastewaters from the water treatment plant must meet technology-based effluent limitations in Table A of the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan), with the exception of effluent limitations for suspended solids, for which the Facility has been granted an exception by the State Water Board.

The Discharger's pulping process includes an oxygen delignification process to brighten finished unbleached pulp and as a pretreatment process prior to its totally chlorine free (TCF) bleaching process. The Discharger has stated that it plans to produce both unbleached pulps and bleached pulp using TCF bleaching as market demands require. The Regional Water Board has determined that, for purposes of the effluent limitations guidelines, the Samoa Pulp Mill fits into the Unbleached Kraft subcategory (40 CFR 430 Subpart C), when a kraft pulp is produced without TCF bleaching. When producing a kraft pulp using TCF bleaching, the Samoa Pulp Mill fits into the Bleached Kraft subcategory (40 CFR 430 Subpart B). Should the Discharger produce bleached pulp using traditional chlorine-based bleaching processes, effluent limitations guidelines for bleached kraft pulp would apply.

Raw surface water used in the pulp making process is drawn directly from the Mad River and treated in an onsite water treatment plant to remove naturally-occurring mud and silt entrained in the river water prior to use in the mill. The water treatment plant consists of conventional circular clarifiers with the addition synthetic polymers to aid the settling of the river mud and silt. Solids removed in the water treatment plant are discharged to the ocean. There are no applicable effluent limitation guidelines for discharges from water treatment plants and the effluent limitation guidelines for the kraft pulp industry do not apply to the water treatment plant discharge. Consequently, the discharge of solids from the Facility's water treatment plant is regulated under technology-based effluent limitations that are contained in Table A of the Ocean Plan. However, pursuant to State Water Board Resolution 87-103, the Samoa Pulp Mill is granted an exception to the suspended solids standard in the Ocean Plan that requires dischargers to remove 75 percent of solids from the influent stream before discharging to the ocean.

A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

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<sup>1</sup> All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

**G. Water Quality-Based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements is discussed in Attachment F Fact Sheet part IV.C.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

**H. Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan for the North Coast Basin* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean Beneficial uses applicable to the Pacific Ocean are as follows:

**Table 5. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	<u>Existing:</u> NAV – Navigation REC1 – Water Contact Recreation REC2 – Non-contact Water Recreation COMM – Commercial and Sport Fishing WILD – Wildlife Habitat RARE – Rare, Threatened, or Endangered Species MAR – Marine Habitat MIGR – Migration of Aquatic Organisms SPWN – Spawning, Reproduction, and/or Early Development SHELL – Shellfish Harvesting AQUA – Aquaculture <u>Potential:</u> IND – Industrial Service Supply PRO – Industrial Process Supply ASBS – Preservation of Areas of Special Biological Significance

Requirements of this Order implement the Basin Plan.

The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for coastal waters. Requirements of this Order implement the Thermal Plan.

**H. California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. To the extent that there is a conflict between a provision of this plan and a provision of another statewide plan or policy, or the Basin Plan, the more stringent provision shall apply except where pursuant to Chapter III.I of the Ocean Plan, the State Water Board has approved an exception.

The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

**Table 6. Ocean Plan Beneficial Uses**

Discharge Point	Receiving Water	Beneficial Uses
Outfall 001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish spawning and shellfish harvesting

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

**J. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 C.F.R. § 131.21; 65 Fed. Reg. 24641; (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000 must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

**K. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on pH, total suspended

solids, biochemical oxygen demand, and adsorbable organic halides (AOX) for pulp processing wastewaters and technology-based effluent limitations based on Table A of the Ocean Plan for the discharge from the water treatment plant. Restrictions are discussed in section IV.B of Attachment F (Fact Sheet). This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations for Aldrin, HCH, DDT, and TCDD Equivalents for have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the Ocean Plan, which was approved by USEPA on February 14, 2006. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

**L. Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

**M. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in a previous permit, with some exceptions where limitations may be relaxed.

**N. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of

the state. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

**O. Monitoring and Reporting.** Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 of the CWC authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

**P. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

**Q. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

**R. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

### III. DISCHARGE PROHIBITIONS

- A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.
- B. The discharge of any waste at any point not described in Finding II.B is prohibited.
- C. The creation of a pollution, contamination, or nuisance as defined by Water Code section 13050 is prohibited.
- D. The discharge of sanitary wastes to the Pacific Ocean is prohibited.

#### IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

##### A. Effluent Limitations – Discharge Point 001

##### 1. Final Effluent Limitations during Bleached Pulp Production<sup>2</sup> – Discharge Point 001

During manufacture of bleached pulp, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP:

**Table 7. Effluent Limitations – Bleached Pulp**

Parameter	Units	Effluent Limitations					
		Average Monthly <sup>3</sup>	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median
TSS	lbs/day <sup>4</sup>	22,960		42,560			
BOD <sub>5</sub>	lbs/day <sup>3</sup>	11,270		21,630			
pH <sup>5</sup>	standard units				5.0	9.0	
(AOX) <sup>6</sup>	ug/L			20			
HCH	ug/L			0.93	1.4		0.46
TCDD equivalents	pg/L	0.45					
Aldrin	ug/L	0.0026					
DDT	ug/L	0.020					

<sup>2</sup> Bleached Pulp Production shall mean the chemical delignification of pulp with chlorine compounds and by means of a Totally Chlorine-Free (TCF) bleaching process. The use of oxygen delignification is not included in this definition of bleached pulp production.

<sup>3</sup> The monthly discharge (lbs/day) of BOD and TSS during production of bleached pulp is obtained from the following calculation on any calendar month:

$$\text{Monthly Discharge (lbs/day)} = \frac{8.34}{N} \sum_{i=1}^N Q_i C_i$$

in which N is the number of days of production of bleached pulp in any calendar month.  $Q_i$  and  $C_i$  are the flow rate (mgd) and the constituent concentration, respectively, which are associated with each of the N days in any calendar month.

<sup>4</sup> Based on a monthly average production rate of 700 ADT/day

<sup>5</sup> Compliance with pH limitations shall be determined in accordance with 40 CFR 401.17 and 430.22, as explained in the Fact Sheet.

<sup>6</sup> Compliance with the AOX limitation shall be determined by analyzing the water treatment plant effluent at INT-001 and the effluent discharge at EFF-001. The AOX measured at INT-001 shall be subtracted from the AOX measured at EFF-001 to determine compliance with this limitation.

## 2. Final Effluent Limitations during Unbleached Pulp Production – Discharge Point 001

During manufacture of unbleached pulp, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP.

**Table 8. Effluent Limitations – Unbleached Pulp**

Parameter	Units	Effluent Limitations					
		Average Monthly <sup>7</sup>	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median
TSS	lbs/day <sup>3</sup>	8,400		16,800			
BOD <sub>5</sub>	lbs/day <sup>3</sup>	3,920		7,840			
pH <sup>3</sup>	standard units				56.0	9.0	
(AOX) <sup>4</sup>	ug/L			20			
HCH	ug/L			0.93	1.4		0.46
TCDD equivalents	pg/L	0.45					
Aldrin	ug/L	0.0026					
DDT	ug/L	0.020					

## 3. Final Effluent Limitations for the Raw Water Discharge from the Water Treatment Plant– Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF-002 as described in the attached MRP.

**Table 9. Final Effluent Limitations – Water Treatment Plant**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Six-Month Median

<sup>7</sup> The monthly discharge (lbs/day) of BOD and TSS during production of unbleached pulp is obtained from the following calculation on any calendar month:

$$\text{Monthly Discharge (lbs/day)} = \frac{8.34}{N} \sum_{i=1}^N Q_i C_i$$

in which N is the number of days of production of unbleached pulp in any calendar month. Q<sub>i</sub> and C<sub>i</sub> are the flow rate (mgd) and the constituent concentration, respectively, which are associated with each of the N days in any calendar month.

<u>Parameter</u>	<u>Units</u>	<u>Effluent Limitations</u>				
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Instantaneous Maximum</u>	<u>Six-Month Median</u>
Oil and Grease	mg/L	25	40	75	---	---
Total Suspended Solids Wet Season (Oct.-Apr.)	lbs/day	70,000	---	400,000	---	---
Total Suspended Solids Dry Season (May-Sep.)	lbs/day	14,000	---	400,000	---	---
Settleable Solids	mL/L-hr	1.0	1.5	3.0	---	---
Turbidity	NTU	75	100	225	---	---
pH	s.u.	6.0 to 9.0 at all times				
Arsenic	ug/L	---	---	3,367	8,935	583
Cadmium	ug/L	---	---	464	1,160	116
Hexavalent Chromium	ug/L	---	---	928	2,320	232
Copper	ug/L	---	---	1,162	3,250	118
Lead	ug/L	---	---	928	2,320	232
Mercury	ug/L	---	---	18.5	46.3	4.58
Nickel	ug/L	---	---	2,320	5,800	580
Selenium	ug/L	---	---	6,960	17,400	1,740
Silver	ug/L	---	---	306	794	62.8
Zinc	ug/L	---	---	8,360	22,280	1,400
Cyanide	ug/L	---	---	464	1,160	116
Chronic Toxicity	TUc	---	---	116	---	---
Endosulfan	ug/L	---	---	2,088	3,132	1,044
Endrin	ug/L	---	---	0.464	0.696	0.232
HCH	ug/L	---	---	0.93	1.4	0.46
Aldrin	ug/L	0.0026	---	---	---	---
Chlordane	ug/L	0.0026	---	---	---	---
Dieldrin	ug/L	0.0046	---	---	---	---
Heptachlor	ug/L	0.0058	---	---	---	---
Heptachlor Epoxide	ug/L	0.0023	---	---	---	---
Toxaphene	ug/L	0.024	---	---	---	---
DDT	ug/L	0.020	---	---	---	---
TCDD Equivalents	pg/L	0.45	---	---	---	---

**3. Final Effluent Limitations for the Raw Water Discharge from the Water Treatment Plant during Unbleached Pulp Production — Discharge Point 001**  
 The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF 002 as described in the attached MRP.

**Table 9. Effluent Limitations – Water Treatment Plant**

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median
Total Suspended Solids							
Wet Season (Oct-Apr.)	lbs/d	70,000		400,000			
Dry Season (May-Sept.)	lbs/d	14,000		400,000			

**B. Land Discharge Specifications (Not Applicable)**

**C. Reclamation Specifications (Not Applicable)**

**V. RECEIVING WATER LIMITATIONS**

**A. Surface Water Limitations**

The following receiving water limitations are based on water quality objectives established by the Ocean Plan and are a required part of this Order. Compliance with the water quality objectives contained in the Ocean Plan shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed.

**1. Bacterial Characteristics**

- a. **Body Contact Standards.** Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone designated for water contact recreation use by the Regional Water Board, but including all kelp beds, the following bacteriological objectives shall be maintained throughout the water column.

**30-Day Geometric Mean –** The following standards are based on the geometric mean of the five most recent samples from each receiving water monitoring location.

- i. Total coliform density shall not exceed 1,000 per 100 ml;
- ii. Fecal coliform density shall not exceed 200 per 100 mL; and
- iii. Enterococcus density shall not exceed 35 per 100 mL.

**Single Sample maximum;**

- i. Total coliform density shall not exceed 10,000 per 100 ml;
- ii. Fecal coliform density shall not exceed 400 per 100 mL; and

- iii. Enterococcus density shall not exceed 104 per 100 mL.
- iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform to total coliform ratio exceeds 0.1.

b. Shellfish Harvesting. At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the following bacteriological objectives shall be maintained throughout the water column:

- i. The median total coliform density shall not exceed 70 organisms per 100 mLs, and in not more than 10 percent of samples shall coliform density exceed 230 organisms per 100 mLs.

## 2. Physical Characteristics

- a. Floating particulates and grease and oil shall not be visible.
- b. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
- c. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.
- d. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

## 3. Chemical Characteristics

- a. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally as a result of the discharge of oxygen demanding waste material.
- b. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
- c. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
- d. The concentration of substances set forth in Chapter IV, Table B of the Ocean Plan in marine sediments shall not be increased to levels that would degrade indigenous biota.
- e. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
- f. Nutrient levels shall not cause objectionable aquatic growths or degrade indigenous biota.
- g. Discharges shall not cause exceedances of water quality objectives for ocean waters of the State established in Table B of the Ocean Plan.
- h. Discharge of radioactive waste shall not degrade marine life.

## 4. Biological Characteristics

- a. Marine communities, including vertebrate, invertebrate and plant species, shall not be degraded.

- b. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
- c. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

#### 5. General Standards

- a. The discharge shall not cause a violation of any applicable water quality standard for the receiving waters adopted by the Regional Water Board or the State Water Board as required by the Clean Water Act and regulations adopted thereunder.
- b. The discharge shall be essentially free of:
  - i. Material that is floatable or will become floatable upon discharge.
  - ii. Settleable material or substances that may form sediments that will degrade benthic communities or other aquatic life.
  - iii. Substances that will accumulate to toxic levels in marine waters, sediments or biota.
  - iv. Substances that significantly decrease natural light to benthic communities and other marine life.
  - v. Material that results in aesthetically undesirable discoloration of the ocean surface.
- c. Waste effluent shall be discharged in a manner that provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.

#### B. Groundwater Limitations *(Not Applicable)*

### VI. PROVISIONS

#### A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following provisions:
  - a. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

- b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, interim or final effluent limitation, land discharge specification, reclamation specification, receiving water limitation, or provision of this Order that may result in a significant threat to human health or the environment, such as inundation of treatment components, breach of pond containment, sanitary sewer overflow, irrigation runoff, etc., that results in a discharge to a drainage channel or a surface water, the Discharger shall as soon as possible, but no later than two (2) hours after becoming aware of the discharge, orally notify the State Office of Emergency Services, the local health officer or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board.
- c. As soon as possible, but no later than twenty-four (24) hours after becoming aware of an unauthorized discharge to a drainage channel or a surface water, the Discharger shall submit to the Regional Water Board a written certification that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over the affected water body have been notified of the discharge. Written documentation of the circumstances of the spill event shall be submitted to the Regional Water Board within five (5) days, unless the Regional Water Board waives the confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and to prevent recurrence, including, where applicable, a schedule of implementation. Other types of noncompliance require written notification, as described above, at the time of the normal monitoring report.

## **B. Monitoring and Reporting Program (MRP) Requirements**

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

## **C. Special Provisions**

### **1. Reopener Provisions**

- a. **Standard Revisions.** If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.
- b. **Reasonable Potential.** This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the

reasonable potential to cause, or contributes to an excursion above an Ocean Plan Table B water quality objective.

- c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a limitation for a specific toxicant identified in the TRE.
- d. **Tiered Effluent Limitations.** If the pulp production rates change significantly during the life of this Order, the Regional Water Board may reopen this Order and make modifications in production-based effluent limitations for BOD and total suspended solids.
- e. **Ocean Plan Exception.** If the State Water Board revises, reissues, or revokes the Facility's Ocean Plan exception for the discharge of solids from its water treatment plant, the Regional Water Board may reopen this Order and make modifications in requirements in this Order related to this discharge.

## 2. Special Studies, Technical Reports and Additional Monitoring Requirements

### a. Toxicity Reduction Requirements

- i. **Whole Effluent Toxicity.** The MRP of this Order requires routine monitoring for whole effluent toxicity at Monitoring Location EFF-001 and EFF-002, as described in Table E-1 of the MRP, to determine compliance with the Ocean Plan's water quality objective for toxicity. As established by the MRP, if the results of whole effluent toxicity tests exceed the chronic toxicity water quality objective or effluent limitation of 116 TUC, the Discharger shall conduct accelerated toxicity monitoring.

Results of accelerated toxicity monitoring will indicate a need to conduct a Toxicity Reduction Evaluation (TRE), if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE workplan and the ~~TRE Action Plan~~ prepared by the Discharger pursuant to Section VI. C. 2. a. ii. of this Order, below, and section V.A.8.c of the MRP, respectively.

- ii. **Toxicity Reduction Evaluations (TRE) workplan.** The Discharger shall prepare and submit to the Regional Water Board Executive Officer a TRE workplan by **December 1, 2010**. This plan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include at least the following items:

- (a) A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
  - (b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices.
  - (c) If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).
- iii. **Toxicity Reduction Evaluations (TRE).** The TRE shall be conducted in accordance with the following:
- (a) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test, required by Section V of the MRP, if that test result exceeds the chronic toxicity water quality objective or effluent limitation.
  - (b) The TRE shall be conducted in accordance with the Discharger's workplan.
  - (c) The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B-99/002.
  - (d) The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity.
  - (e) The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. As guidance, the Discharger shall use the USEPA chronic manual, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).
  - (f) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with acute or chronic toxicity parameters.
  - (g) Many recommended TRE elements may be implemented in tandem with required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of recommendations of such programs may be acceptable to comply with requirements of the TRE.
  - (h) The Regional Water Board recognizes that chronic toxicity may be episodic and identification of a reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

### 3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program (PMP).** The Discharger shall, as required by the Executive Officer, develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as detected, not quantified (DNQ) when the effluent limitation is less than the minimum detection limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- (1) The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the reported Minimum Level (ML); or
- (2) The concentration of the pollutant is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

- (1) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- (2) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- (3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- (4) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- (5) An annual status report that shall be sent to the Regional Water Board including:
  - (a) All PMP monitoring results for the previous year;
  - (b) A list of potential sources of the reportable priority pollutant(s);
  - (c) A summary of all actions undertaken pursuant to the control strategy; and
  - (d) A description of actions to be taken in the following year.

**b. Spill Prevention and Control**

- i. **Plan Preparation.** The Discharger shall implement a Best Management Practices (BMP) Plan to prevent or otherwise contain leaks and spill of spent pulping liquors, soap, and turpentine, and to control intentional diversions of these materials. The BMP Plan shall be based on best engineering practices and shall be implemented in a manner that takes into account the specific circumstances at the Samoa Pulp Mill. At a minimum, the BMP Plan should include
- (a) initial and refresher training of operators, maintenance personnel, and other technical and supervisory personnel who have responsibility for operating, maintaining, or supervising the operation and maintenance of equipment;
  - (b) engineering analyses of problem areas and appropriate prevention and control strategies;
  - (c) preventive maintenance;
  - (d) engineered controls and containment;
  - (e) work practices;
  - (f) surveillance and repair programs;
  - (g) dedicated monitoring and alarm systems; and
  - (h) recordkeeping to document implementation of these practices.
- Additional BMPs that should be considered include:
- (i) secondary containment diking around pulping liquor and storage tanks;
  - (j) covered storage tank capacity for collected spills and planned liquor diversions;
  - (k) automated spill detection systems, such as high level, flow, and conductivity monitors and alarms; and
  - (l) backup equipment capacity to handle process upset conditions.
- ii. **Plan Amendment and Review** The Discharger shall review and evaluate its BMP plan at least once every five years or more often whenever there is a change in mill design, operation or maintenance that materially affects the potential for leaks or spills.

4. Construction, Operation and Maintenance Specifications *(Not Applicable)*

5. Special Provisions for Municipal Facilities (POTWs Only) *(Not Applicable)*

6. Other Special Provisions *(Not Applicable)*

7. Compliance Schedules *(Not Applicable)*

## VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order that are derived from Ocean Plan Table B water quality objectives shall be determined as specified below:

### A. Compliance with Single-Constituent Effluent Limitations.

Dischargers are out of compliance with the effluent limitation if the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum\* Level.

### B. Compliance with Effluent Limitations expressed as a Sum of Several Constituents

Dischargers are out of compliance with an effluent limitation which applies to the sum of a group of chemicals (e.g., PCB's) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as ND or DNQ.

### C. Multiple Sample Data Reduction

The concentration of the pollutant in the effluent may be estimated from the result of a single sample analysis or by a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses when all sample results are quantifiable (i.e., greater than or equal to the reported Minimum\* Level). When one or more sample results are reported as ND or DNQ, the central tendency concentration of the pollutant shall be the median (middle) value of the multiple samples. If, in an even number of samples, one or both of the middle values is ND or DNQ, the median will be the lower of the two middle values.

## ATTACHMENT A – DEFINITIONS

### Acute Toxicity

#### a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

#### b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Ocean Plan Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log (100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

**Areas of Special Biological Significance (ASBS):** Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

**Arithmetic Mean ( $\mu$ ),** also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where:  $\Sigma x$  is the sum of the measured ambient water concentrations, and n is the number of samples.

**Average Monthly Effluent Limitation (AMEL):** the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

**Average Weekly Effluent Limitation (AWEL):** the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

**Bioaccumulative** pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

**Carcinogenic** pollutants are substances that are known to cause cancer in living organisms.

**Chlordane** shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

**Chronic Toxicity:** This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Ocean Plan Appendix III, Table III-1.

**Coefficient of Variation (CV):** the measure of the data variability that is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

**Daily Discharge:** Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean

measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

**DDT** shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

**Degrade:** Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely; demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

**Detected, but Not Quantified (DNQ):** sample results less than the reported Minimum Level, but greater than or equal to the laboratory's MDL.

**Dichlorobenzenes** shall mean the sum of 1,2- and 1,3-dichlorobenzene.

**Downstream Ocean Waters:** Waters downstream with respect to ocean currents.

**Dredged Material:** Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoil".

**Effective Concentration (EC)** is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

**Enclosed Bays** means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay,

Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

**Endosulfan:** The sum of endosulfan-alpha and -beta and endosulfan sulfate.

**Estimated Chemical Concentration** is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

**Estuaries and Coastal Lagoons** are waters at the mouths of streams that serve as areas of mixing for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta, as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

**Halomethanes** shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

**HCH** shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

**Inhibition Concentration (IC)** is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC25 is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.

**Initial Dilution** is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

**Instantaneous Maximum Effluent Limitation:** the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

**Instantaneous Minimum Effluent Limitation:** the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

**Kelp Beds;** for or purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera *Macrocystis* and *Nereocystis*. Kelp beds include the total foliage canopy of *Macrocystis* and *Nereocystis* throughout the water column.

**Lowest Observed Effect Concentration (LOEC)** is the lowest concentration of toxicant to which organisms are exposed in a test, which causes statistically significant adverse effects on the test organisms (i.e., where the values for the observed endpoints are statistically significantly different from the control).

**Mariculture:** The culture of plants and animals in marine waters independent of any pollution source.

**Material:** (a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

**Maximum Daily Effluent Limitation (MDEL)** means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

**Median** is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements ( $n$ ) is odd, then the median =  $X_{(n+1)/2}$ . If  $n$  is even, then the median =  $(X_{n/2} + X_{(n/2)+1})/2$  (i.e., the midpoint between the  $n/2$  and  $n/2+1$ ).

**Method Detection Limit (MDL)** is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

**Minimum Level (ML)** is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample

that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

**Natural Light:** Reduction of natural light may be determined by the Regional Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board.

**No Observed Effect Concentration (NOEC)** is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

**Not Detected (ND):** those sample results less than the laboratory's MDL.

**Ocean Waters** are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

**PAHs (polynuclear aromatic hydrocarbons)** shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

**PCBs (polychlorinated biphenyls)** shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

**Pollutant Minimization Program (PMP)** means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention** means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not

include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

**Reported Minimum Level:** The ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

**Shellfish:** Organisms identified by the California Department of Public Health as shellfish for public health purposes (i.e., mussels, clams and oysters).

**Significant Difference:** Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

**Six-Month Median Effluent Limitation:** The highest allowable moving median of all daily discharges for any 180-day period.

**Source of Drinking Water** is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

**Standard Deviation ( $\sigma$ )** is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

$\mu$  is the arithmetic mean of the observed values; and

n is the number of samples.

**State Water Quality Protection Areas (SWQPAs):** Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution No. 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

**TCDD Equivalents** shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

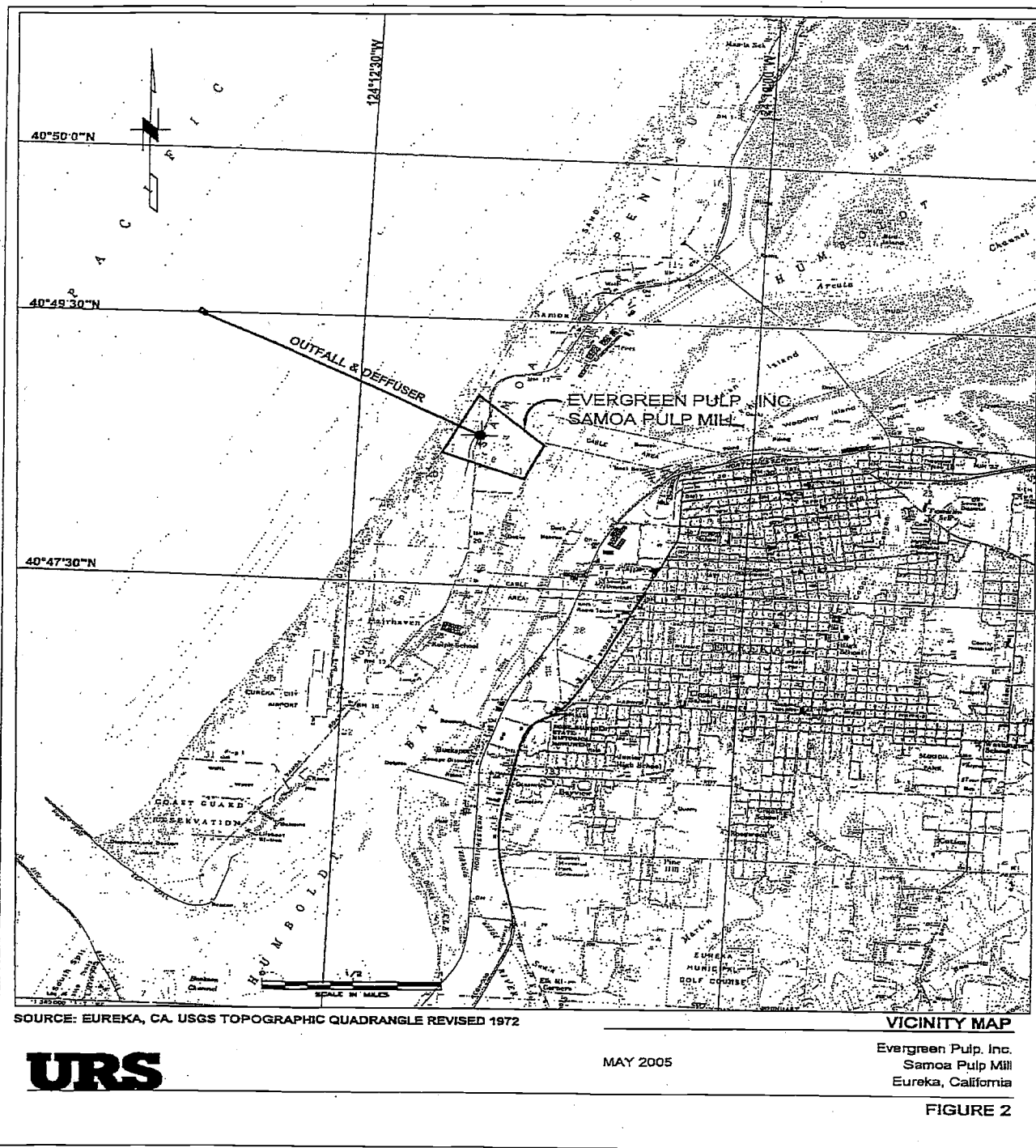
Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

**Toxicity Reduction Evaluation (TRE)** is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

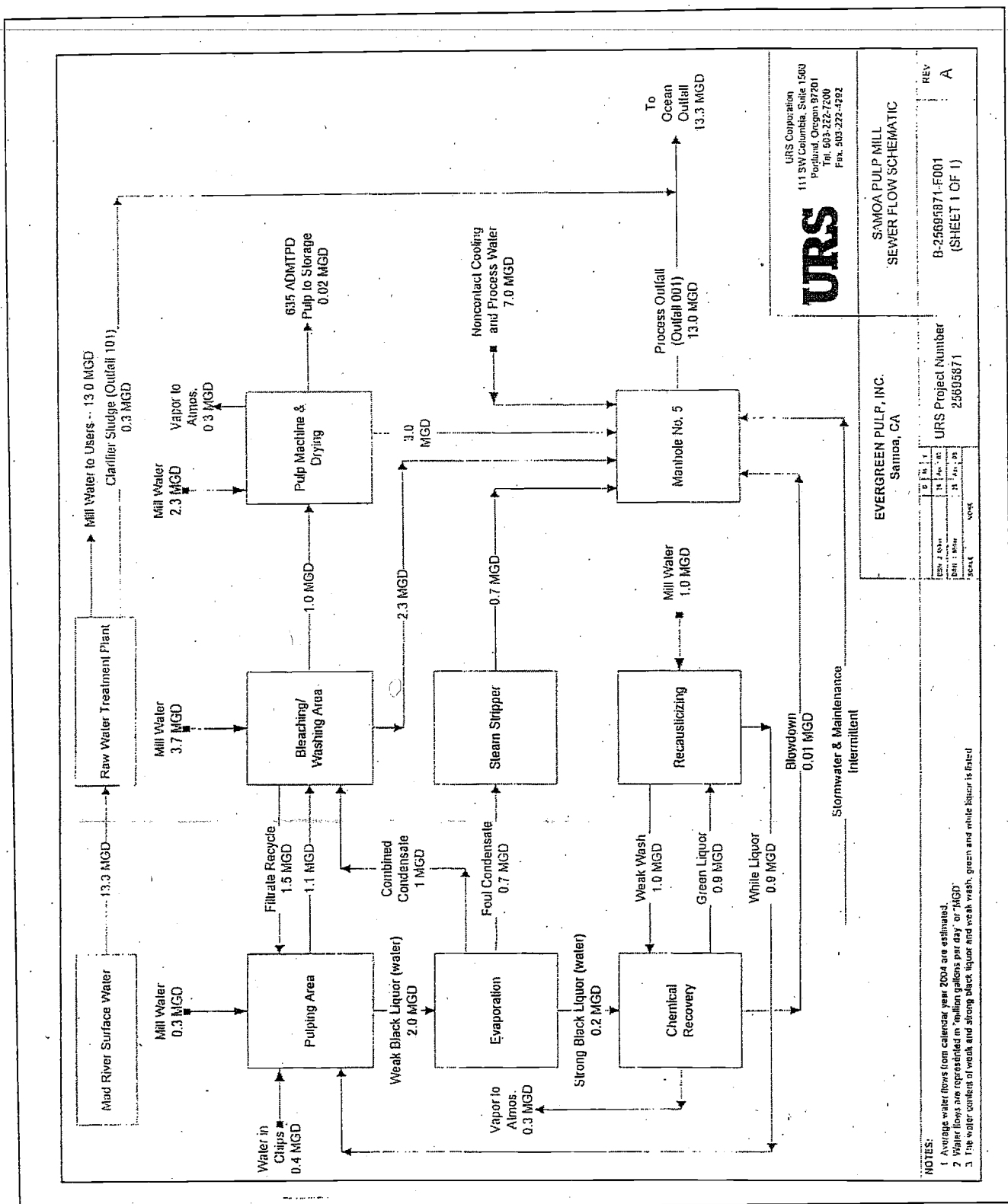
The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

**Waste:** As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

ATTACHMENT B – MAP



# ATTACHMENT C – FLOW SCHEMATIC



## **ATTACHMENT D –STANDARD PROVISIONS**

### **I. STANDARD PROVISIONS – PERMIT COMPLIANCE**

#### **A. Duty to Comply**

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

#### **B. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

#### **C. Duty to Mitigate**

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

#### **D. Proper Operation and Maintenance**

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

### **E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

### **F. Inspection and Entry**

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

### **G. Bypass**

#### **1. Definitions**

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be

expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
  - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
  - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
5. Notice
  - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
  - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

## **H. Upset**

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
  - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
  - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
  - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

## **II. STANDARD PROVISIONS – PERMIT ACTION**

### **A. General**

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or

termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

#### **B. Duty to Reapply**

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

#### **C. Transfers**

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

### **III. STANDARD PROVISIONS – MONITORING**

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

### **IV. STANDARD PROVISIONS – RECORDS**

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

#### **B. Records of monitoring information shall include:**

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

**C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):**

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

**V. STANDARD PROVISIONS – REPORTING**

**A. Duty to Provide Information**

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

**B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital

investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
  - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware

that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

### **D. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

### **E. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 2-24 hours from the time the Discharger becomes aware of the circumstances. Compliance with the 2-24 hour reporting requirement meets the minimum reporting requirement set forth in section 122.41(l)(6)(i) of title 40 of the code of federal regulations. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce,

eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
  - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 2 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

#### **F. Planned Changes**

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

#### **G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2).)

#### **H. Other Noncompliance**

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

#### **I. Other Information**

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

### **VI. STANDARD PROVISIONS – ENFORCEMENT**

- A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

### **VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS**

#### **A. Non-Municipal Facilities**

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):
  - a. 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));
  - b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4, 6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));
  - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

- d. The level established by the Regional Water Board in accordance with 40 CFR Section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):
- a. 500 micrograms per liter ( $\mu\text{g/L}$ ) (40 C.F.R. § 122.42(a)(2)(i));
  - b. 1 milligram per liter ( $\text{mg/L}$ ) for antimony (40 C.F.R. § 122.42(a)(2)(ii));
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or
  - d. The level established by the Regional Water Board in accordance with 40 CFR Section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

## ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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## ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

### I. GENERAL MONITORING PROVISIONS

- A. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed one hour.
- B. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved by section 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharger monitoring reports.
- C. Laboratories analyzing monitoring samples shall be certified by the Department of Public Health, in accordance with the provisions of Water Code section 13176, and must include quality assurance / quality control data with their analytical reports.

### II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

**Table E-1A. Monitoring Station Locations**

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	INT-001	Internal monitoring station representing treated water supply prior to use in the Pulp Mill.
001	EFF-001	Combined discharge of all pulp mill process wastewaters (Manhole 5)
001	EFF-002	Raw water treatment plant sludge discharge prior to mixing with other pulping process wastewaters (formerly Outfall 101)
--	RSW-001	Receiving water at a location within the zone of initial dilution at discharge outfall at 40° 49'10"N, 124 °13'30'W°13'32'W
--	RSW-002	Receiving water at a location immediately outside the zone of initial dilution
--	REF-001	The reference station in the ocean at least 1,000 feet upcurrent of the effluent plume, representing natural background and natural water quality conditions

**Table E-1B. Benthic Monitoring Station Locations**

STATION	CALIFORNIA COORDINATES (Lambert Projection)		LATITUDE NORTH	LONGITUDE WEST
	NORTH	EAST		
ST31	547188.74	1381203.50	40°48'49"	124°14'09"
NT31	553087.46	1384078.38	40°49'48"	124°13'34"
ST28	546649.69	1382309.53	40°48'44"	124°13'55"
SM28	548124.37	1383028.25	40°48'59"	124°13'46"
CT28	549599.05	1383746.97	40°49'14"	124°13'37"
NM28	551073.73	1384465.69	40°49'29"	124°13'28"
NT28	552548.41	1385184.41	40°49'43"	124°13'19"
ST25	546110.64	1383415.56	40°48'39"	124°13'40"
SM25	547585.32	1384134.28	40°48'54"	124°13'31"
SD25	548322.66	1384493.64	40°49'01"	124°13'27"
ND25	549797.34	1385212.36	40°49'16"	124°13'18"
NM25	550534.68	1385571.72	40°49'24"	124°13'13"
NT25	552009.36	1386290.44	40°49'38"	124°13'05"
ST22	545571.59	1384521.60	40°48'34"	124°13'25"
SM22	547046.27	1385240.31	40°48'49"	124°13'17"
CT22	548520.95	1385959.03	40°49'04"	124°13'08"
NM22	549995.63	1386677.75	40°49'19"	124°12'59"
NT22	551470.31	1387396.47	40°49'33"	124°12'50"
ST19	545032.54	1385627.63	40°48'29"	124°13'11"
NT19	550931.26	1388502.50	40°49'28"	124°12'36"
NC25	572647.70	1396349.00	40°53'05"	124°11'00"

**Table E-1C. Trawling Station Locations**

TRAWL STATION NAME	DESCRIPTION
Trawl Track TR1	Southernmost trawl track running upcurrent along the 25-meter depth contour between 3,000 meters south and 4,500 meters south of the outfall diffuser for 10 minutes
Trawl Track TR2	Running upcurrent along the 25-meter depth contour between the outfall diffuser and 1,500 meters south of the diffuser for 10 minutes
Trawl Track TR3	Running upcurrent along the 25-meter depth contour between the outfall diffuser and 1,500 meters north of the diffuser for 10 minutes
Trawl Track TR4	Running upcurrent along the 25-meter depth contour between 3,000 meters north and 4,500 meters north of the outfall diffuser for 10 minutes
Trawl Track TR5	Northernmost trawl track running upcurrent along the 25-meter depth contour between benthic monitoring station NC25 (8,000 meters north of the outfall diffuser) and 1,500 meters north of station NC25 for 10 minutes

### III. INTERNAL MONITORING REQUIREMENTS

#### A. Monitoring Location INT-001

1. The Discharger shall monitor treated water supply prior to use in the Pulp Mill at INT-001 as follows:

**Table E-2. Internal Monitoring INT-001**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Adsorbable Organic Halides (AOX)	ug/L	24-hour composite	monthly during unbleached pulp production	EPA Method 1650 (20 ug/L)

### IV. EFFLUENT MONITORING REQUIREMENTS

#### A. Monitoring Location EFF-001

1. The Discharger shall monitor combined wastewater flow to the outfall (including raw water treatment plant clarifier sludge) at EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

**Table E-3. Effluent Monitoring EFF-001**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units) <sup>1</sup>
Flow	MGD	daily total	continuous	recording meter
BOD <sub>5</sub>	mg/L	24-hour composite	daily <sup>2</sup>	Standard Method 5210B
Total Suspended Solids	mg/L	24-hour composite	daily	Standard Method 2540D
pH	pH	recording meter	continuous	40CFR136
AOX	ug/L	24-hour composite	monthly	EPA Method 1650 (20 ug/L)
HCH	ug/L	24-hour composite	monthly	40CFR136 (0.02)
DDT	ug/L	24-hour composite	quarterly/monthly	40CFR136 (0.05)

<sup>1</sup> For toxic pollutants with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix II of the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) is not below the effluent limitation, the detection limit shall be the lowest ML. For toxic pollutants without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix II of the Ocean Plan.

<sup>2</sup> During periods of startup and shutdown of the Facility, the Discharger shall conduct monitoring at EFF-001 for flow, BOD, Total Suspended Solids, and pH for a minimum of 5 days until stable operational conditions have been reached. Monitoring samples shall be collected in accordance with Table E-3.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units) <sup>1</sup>
			Y	
TCDD Equivalents	ug/L	24-hour composite	quarterly	40CFR136
Aldrin	ug/L	24-hour composite	quarterly	40CFR136 (0.005)
Arsenic	ug/L	24-hour composite	semiannually <sup>2</sup>	40CFR136 (1)
Cadmium	ug/L	24-hour composite	semiannually	40CFR136 (0.2)
Hexavalent Chromium	ug/L	24-hour composite	semiannually	40CFR136 (5)
Copper	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
Lead	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
Mercury	ug/L	Grab	semiannually	40CFR136 (0.2)
Nickel	ug/L	24-hour composite	semiannually	40CFR136 (1)
Selenium	ug/L	24-hour composite	semiannually	40CFR136 (1)
Silver	ug/L	24-hour composite	semiannually	40CFR136 (0.2)
Zinc	ug/L	24-hour composite	semiannually	40CFR136 (1)
Cyanide	ug/L	24-hour composite	semiannually	40CFR136 (5)
Total Chlorine Residual	ug/L	Grab	semiannually	40CFR136
Ammonia	ug/L	Grab	semiannually	40CFR136
Phenolic Compounds (non-chlorinated)	ug/L	24-hour composite	semiannually	40CFR136 (1)
Chlorinated Phenolics	ug/L	24-hour composite	semiannually	40CFR136 (1)
Endosulfan	ug/L	24-hour composite	semiannually	40CFR136 (0.02)
Endrin	ug/L	24-hour composite	semiannually	40CFR136 (0.01)
Acrolein	ug/L	Grab	semiannually	40CFR136 (2)
Antimony	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
bis(2-chloroethoxy) methane	ug/L	24-hour composite	semiannually	40CFR136 (5)
bis(2-chloroisopropyl) ether	ug/L	24-hour composite	semiannually	40CFR136 (2)
Chlorobenzene	ug/L	Grab	semiannually	40CFR136 (0.5)
Chromium	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
di-n-butyl phthalate	ug/L	24-hour composite	semiannually	40CFR136 (10)
Dichlorobenzenes	ug/L	Grab	semiannually	40CFR136 (2)
Diethyl phthalate	ug/L	24-hour composite	semiannually	40CFR136 (2)
Dimethyl phthalate	ug/L	24-hour composite	semiannually	40CFR136 (2)
4,6-dinitro-2-methylphenol	ug/L	24-hour composite	semiannually	40CFR136 (5)
2,4-dinitrophenol	ug/L	24-hour composite	semiannually	40CFR136 (5)
Ethylbenzene	ug/L	Grab	semiannually	40CFR136 (0.5)
Fluoranthene	ug/L	24-hour composite	semiannually	40CFR136 (0.05)
Hexachlorocyclopentadiene	ug/L	24-hour composite	semiannually	40CFR136 (5)
Nitrobenzene	ug/L	24-hour composite	semiannually	40CFR136 (1)
Thallium	ug/L	24-hour composite	semiannually	40CFR136 (1)
Toluene	ug/L	Grab	semiannually	40CFR136 (0.5)
Tributyltin	ug/L	24-hour composite	semiannually	40CFR136
1,1,1-trichloroethane	ug/L	Grab	semiannually	40CFR136 (0.5)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units) <sup>1</sup>
Acrylonitrile	ug/L	Grab	semiannually	40CFR136 (2)
Benzene	ug/L	Grab	semiannually	40CFR136 (0.5)
Benzidine	ug/L	24-hour composite	semiannually	40CFR136 (5)
Beryllium	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
bis(2-chloroethyl) ether	ug/L	24-hour composite	semiannually	40CFR136 (1)
bis(2-ethylhexyl) phthalate	ug/L	24-hour composite	semiannually	40CFR136 (5)
Carbon tetrachloride	ug/L	Grab	semiannually	40CFR136 (0.5)
Chlordane	ug/L	24-hour composite	semiannually	40CFR136 (0.1)
Chlorodibromomethane	ug/L	Grab	semiannually	40CFR136 (0.5)
chloroform	ug/L	Grab	semiannually	40CFR136 (0.5)
1,4-dichlorobenzene	ug/L	Grab	semiannually	40CFR136 (0.5)
3,3'-dichlorobenzidine	ug/L	24-hour composite	semiannually	40CFR136 (5)
1,2-dichloroethane	ug/L	Grab	semiannually	40CFR136 (0.5)
1,1-dichloroethylene	ug/L	Grab	semiannually	40CFR136 (0.5)
Dichlorobromomethane	ug/L	Grab	semiannually	40CFR136 (0.5)
Dichloromethane	ug/L	Grab	semiannually	40CFR136 (0.5)
1,3-dichloropropene	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
Dieldrin	ug/L	24-hour composite	semiannually	40CFR136 (0.01)
2,4-dinitrotoluene	ug/L	24-hour composite	semiannually	40CFR136 (5)
1,2-diphenylhydrazine	ug/L	24-hour composite	semiannually	40CFR136 (1)
Halomethanes	ug/L	Grab	semiannually	40CFR136 (1)
Heptachlor	ug/L	24-hour composite	semiannually	40CFR136 (0.01)
Heptachlor epoxide	ug/L	24-hour composite	semiannually	40CFR136 (0.01)
Hexachlorobenzene	ug/L	24-hour composite	semiannually	40CFR136 (1)
Hexachlorobutadiene	ug/L	24-hour composite	semiannually	40CFR136 (1)
Hexachloroethane	ug/L	24-hour composite	semiannually	40CFR136 (1)
Isophorone	ug/L	24-hour composite	semiannually	40CFR136 (1)
N-nitrosodimethylamine	ug/L	24-hour composite	semiannually	40CFR136 (5)
N-nitroso di-N-propylamine	ug/L	24-hour composite	semiannually	40CFR136 (5)
N-nitrosodiphenylamine	ug/L	24-hour composite	semiannually	40CFR136 (1)
PAHs	ug/L	24-hour composite	semiannually	40CFR136 (10)
PCBs	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
1,1,2,2-tetrachloroethane	ug/L	Grab	semiannually	40CFR136 (0.5)
Tetrachloroethylene	ug/L	Grab	semiannually	40CFR136 (0.5)
Toxaphene	ug/L	24-hour composite	semiannually	40CFR136 (0.5)
Trichloroethylene	ug/L	Grab	semiannually	40CFR136 (0.5)
1,1,2-trichloroethane	ug/L	Grab	semiannually	40CFR136 (0.5)
2,4,6-trichlorophenol	ug/L	24-hour composite	semiannually	40CFR136 (10)
Vinyl chloride	ug/L	Grab	semiannually	40CFR136 (0.5)

<sup>2</sup> Semiannual monitoring for Table B pollutants shall be collected in months not previously sampled

Freshwater Tissue Company  
Samoa Pulp Mill  
ORDER NO. R1-2010-0033  
NPDES NO. CA0005894

**B. Monitoring Location EFF-002**

1. The Discharger shall monitor the raw water treatment plant discharged to the outfall at **EFF-002** as follows:

**Table E-34. Effluent Monitoring EFF-002** df111

Freshwater Tissue Company.  
 Samoa Pulp Mill  
 ORDER NO. R1-2010-0033  
 NPDES NO. CA0005894

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method (Minimum Level, units), respectively
Flow	MGD	daily total	continuous	recording meter
TSS	mg/L	24-hour composite	weekly during unbleached pulp production	Standard Method 2540D
<u>Oil and Grease</u>	<u>mg/L</u>	<u>24-hour composite</u>	<u>monthly</u>	<u>40CFR136</u>
<u>Settleable Solids</u>	<u>mL/L-hr</u>	<u>24-hour composite</u>	<u>monthly</u>	<u>40CFR136</u>
<u>Turbidity</u>	<u>NTU</u>	<u>24-hour composite</u>	<u>monthly</u>	<u>40CFR136</u>
<u>pH</u>	<u>s.u.</u>	<u>24-hour composite</u>	<u>daily</u>	<u>40CFR136</u>
<u>Arsenic</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (1)</u>
<u>Cadmium</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.2)</u>
<u>Hexavalent Chromium</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (5)</u>
<u>Copper</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.5)</u>
<u>Lead</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.5)</u>
<u>Mercury</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.2)</u>
<u>Nickel</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (1)</u>
<u>Selenium</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (1)</u>
<u>Silver</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.2)</u>
<u>Zinc</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (1)</u>
<u>Cyanide</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (5)</u>
<u>Chronic Toxicity</u>	<u>TUc</u>		<u>annually</u>	
<u>Endosulfan</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.02)</u>
<u>Endrin</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.01)</u>
<u>HCH</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.02)</u>
<u>Aldrin</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.005)</u>
<u>Chlordane</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.1)</u>
<u>Dieldrin</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.01)</u>
<u>Heptachlor</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.01)</u>
<u>Heptachlor Epoxide</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.01)</u>
<u>Toxaphene</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.5)</u>
<u>DDT</u>	<u>ug/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136 (0.05)</u>
<u>TCDD Equivalents</u>	<u>pg/L</u>	<u>24-hour composite</u>	<u>annually</u>	<u>40CFR136</u>

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

Although effluent limitations for whole effluent toxicity (WET) are not established by the Order, Whole effluent toxicity (WET) testing of discharges and receiving water is required by this MRP to determine compliance with water quality objectives established by the Ocean Plan for chronic WET and with effluent limitations established for the discharge from the water treatment plant. In certain circumstances, accelerated WET testing and/or a Toxicity Reduction Evaluation (TRE) are required by the MRP when WET "triggers" or effluent limitations are exceeded. Table E-5 below, summarizes the WET testing requirements of the MRP.

**Table E-45. Summary of WET Testing Requirements**

Monitoring Location	WET Testing Requirement
EFF-001	Chronic WET shall be tested at least 2 times per year.
EFF-002	Chronic WET shall be tested at least 1 time per year.

### A. Chronic Toxicity Testing

The Discharger shall conduct chronic toxicity testing to demonstrate compliance with applicable effluent limitations and the Ocean Plan's water quality objective for toxicity. The Discharger shall meet the following chronic toxicity testing requirements:

1. **Test Frequency.** The Discharger shall conduct chronic WET testing in accordance with the schedules established by this MRP, as summarized in Table E-4 above.
2. **Sample Type.** For static renewal or static non-renewal testing, effluent samples and receiving water samples shall be grab samples that are representative of the volume and quality of the discharge from the facility. For toxicity tests requiring renewals, grab samples collected on successive days are required.
3. **Test Species.** In the initial screening phase, Critical life stage bioassay testing shall be conducted with a vertebrate, an invertebrate, and a plant species using an approved test, and test species, as presented below in Table E-56. After this screening period, monitoring shall be conducted using the most sensitive species. The Discharger shall re-screen once with the three species and continue to monitor with the most sensitive species at least once every five years.

**Table E-56. Approved Tests—Chronic Toxicity**

Species	Test	Tier <sup>1</sup>	Reference <sup>2</sup>
Giant kelp, <i>Macrocystis pyrifera</i>	percent germination; germ tube length	1	a, b
Red abalone, <i>Haliotis rufescens</i>	abnormal shell development	1	a, b

Oyster, <i>Crassostrea gigas</i> ; mussels, <i>Mytilus spp.</i>	abnormal shell development; percent survival	1	a, b
Urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	percent normal development	1	a, b
Urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	percent fertilization	1	a, b
Shrimp, <i>Homesimysis costata</i>	percent survival; growth	1	a, b
Topsmelt, <i>Atherinops affinis</i>	larval growth rate; percent survival	1	a, b

<sup>1</sup> First tier methods (designated "1" in this column) are preferred for compliance monitoring. If first tier organisms are not available, the Discharger can use a second tier test method (designated "2" in the above column) following approval by the Regional Water Board.

<sup>2</sup> Protocol References:

- Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. EPA Report No. EPA/600/R-95/136.
- SWRCB 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ.

- Test Methods.** The presence of chronic toxicity shall be estimated as specified in USEPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to West Coast Marine and Estuarine Organisms (USEPA Report No. EPA/600/R-95/136, or subsequent editions), Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms (USEPA Report No. EPA-821-R-02-014 or subsequent editions), or other methods approved by the Executive Officer.
- Test Dilutions.** The chronic toxicity test shall be conducted using a series of at least five dilutions and a control. The series shall consist of the following dilution series: 1.0, 0.75, 0.5, 0.25 and 0.2 percent, and a control. Control and dilution water shall be receiving water collected at an appropriate location beyond the influence of the discharge. Laboratory water may be substituted for receiving water, as described in the USEPA test methods manual, upon approval by the Executive Officer. If the dilution water used is different from the culture water, a second control using culture water shall be used.
- Reference Toxicant.** If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
- Test Failure.** If either the reference toxicant test or the chronic toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger shall re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

8. **Accelerated Monitoring Requirements.** If the result of any chronic toxicity test exceeds a monitoring "trigger" of 116 TUc (the water quality objective for chronic toxicity established by the Ocean Plan or the effluent limitation for the water treatment plant discharge), and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four additional samples – with one test conducted approximately every week over a four week period. Testing shall commence within 14 days of receipt of initial sample results which indicated an exceedance of the chronic toxicity "trigger." If the discharge will cease before the additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to address elevated levels of chronic toxicity in effluent and/or receiving water. The following protocol, which should be incorporated into the TRE Workplan, shall be used for accelerated monitoring and TRE implementation:

- a. If the results of four consecutive accelerated monitoring tests do not exceed the chronic toxicity "trigger" or the effluent limitation of 116 TUc, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, if there is adequate evidence of a pattern of effluent toxicity, the Regional Water Board's Executive Officer may require that the Discharger initiate a TRE.
- b. If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring "trigger." Upon confirmation that the chronic toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.
- c. If the result of any accelerated toxicity test exceeds the monitoring "trigger" or effluent limitation, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) and identify corrective actions to reduce or eliminate the chronic toxicity. ~~Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring "trigger" during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board. The TRE Action Plan shall include, at minimum:~~
  - ~~(1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE-WET monitoring schedule;~~
  - ~~(2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and~~
  - ~~(3) A schedule for these actions.~~

9. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results, which indicate the exceedance of the monitoring "trigger" or effluent limitation for chronic toxicity.

## **B. Chronic Toxicity Reporting**

1. **Routine Reporting.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals.

The WET test report shall contain a narrative report that includes details about WET test procedures and results, including the following:

### **a. Test Procedures**

- i. receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics;
- ii. the source and make-up of the lab control/diluent water used for the test;
- iii. any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;
- iv. identification of any reference toxicant testing performed;
- v. tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of NO
- vi. EC,  $TU_c$  and  $IC_{25}$ ;
- vii. identification of any anomalies or nuances in the test procedures or results;
- viii. Summary and Conclusions section.

### **b. Test Results. Test results shall include, at a minimum, for each test:**

- i. sample date(s)
- ii. test initiation date
- iii. test species
- iv. end point values for each dilution (e.g., number of young, growth rate, percent survival)
- v. NOEC value(s) in percent effluent
- vi.  $IC_{15}$ ,  $IC_{25}$ ,  $IC_{40}$ , and  $IC_{50}$  values (or  $EC_{15}$ ,  $EC_{25}$ ...etc.) in percent effluent
- vii.  $TU_c$  values ( $100/NOEC$ )
- viii. Mean percent mortality ( $\pm$ s.d.) after 96 hours in 100 percent effluent (if applicable)

- ix. NOEC and LOEC values for reference toxicant test(s)
  - x. IC50 or EC50 value(s) for reference toxicant test(s)
  - xi. Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia)
  - xii. Statistical methods used to calculate endpoints.
  - xiii. The statistical output page, which includes the calculation of percent minimum significant difference (PMSD.)
  - xiv. Results of applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD and dates tested; the reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory; and any information on deviations from standard test procedures or problems encountered in completing the test and how the problems were resolved.
2. **Quality Assurance Reporting:** Because the permit requires sublethal hypothesis testing endpoints from methods 1006.0 and 1007.0 in the test methods manual titled Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms (EPA-821-R-02-014, 2002), in-test variability must be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) must be applied, as directed under section 10.2.8 – Test Variability of the test methods manual. Under section 10.2.8, the calculated PMSD for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 6 – Variability Criteria (Upper and Lower PMSD Bounds) for Sublethal Hypothesis Testing Endpoints Submitted Under NPDES Permits, following the review criteria in paragraphs 10.2.8.2.4.1 through 10.2.8.2.4.5 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported.
3. **Compliance Summary:** The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table organized by test species, type of test (survival, growth or reproduction) and monitoring frequency of toxicity data from at least three of the most recent samples. The final report shall clearly demonstrate that the Discharger is in compliance with effluent limitations and other permit requirements.

## VI. LAND DISCHARGE MONITORING REQUIREMENTS (NOT APPLICABLE)

## VII. RECLAMATION MONITORING REQUIREMENTS (NOT APPLICABLE)

## VIII. RECEIVING WATER MONITORING REQUIREMENTS

### A. Offshore Monitoring

1. The Discharger shall conduct water quality monitoring of the Pacific Ocean at RSW-001, RSW-002 and REF-001 as follows:

**Table E-67. Receiving Water Quality Monitoring – Offshore**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total suspended solids			Annually <sup>3</sup>	Standard Method 2540D
turbidity	NTU	grab	Annually <sup>2</sup>	Standard Method 2130B
dissolved oxygen	mg/L	grab	Annually <sup>2</sup>	40CFR136
pH	pH	grab	Annually <sup>2</sup>	40CFR136
Oil and Grease	mg/L	grab	Annually <sup>2</sup>	40CFR136
Visible particles	P/A	observation	Annually <sup>2</sup>	---
Light transmittance	% transmittance	meter	Annually <sup>2</sup>	---

### B. Benthic Monitoring

1. **Sediment.** Within one year of commencement of production of pulp by the Discharger~~Beginning in 2009~~, one pooled bottom sediment sample, consisting of sediments collected from three replicate grabs, shall be collected from all Benthic Monitoring Stations identified in Table E-1B and analyzed as follows:

**Table E-78. Receiving Water Quality Monitoring – Benthic Sediment**

Parameter	Units	Minimum Sampling Frequency	Required Analytical Test Method
Grain size dsitribution	Percent greater than phi	Biennially	---
BOD <sub>5</sub>	mg/kg	Biennially	40CFR136
Grease and Oil	mg/kg	Biennially	Standard Method 2130B

<sup>3</sup> Based on results of the first year of monitoring, the Regional Water Board Executive Officer will determine the frequency of monitoring as well as the specific parameters to be monitored thereafter; however, monitoring shall be required, at a minimum, at least two times during the term of the permit.

Parameter	Units	Minimum Sampling Frequency	Required Analytical Test Method
Total organic carbon	percent	Biennially	40CFR136
Dissolved sulfides	mg/kg	Biennially	40CFR136
Oil and Grease	mg/kg	Biennially	40CFR136
HCH	ug /kg	Biennially	40CFR136 (0.02)
DDT	ug /kg	Biennially	40CFR136 (0.05)
Aldrin	ug /kg	Biennially	40CFR136 ( 0.005)
TCDD Equivalents	ug /kg	Biennially	40CFR136

2. **Infauna.** Samples of bottom sediments shall be collected separately from those collected for sediment analyses from all Benthic Monitoring Stations in Table E-1B. The minimum screen size for collecting benthic infauna shall be 1.0 mm.

The biomass of infauna shall be estimated from wet weight measurements for each of the following taxa: mollusks, echinoderms, polychaetes, crustaceans, and other taxa. Community analysis shall consist of number of species, number of individuals per species and total numerical abundance, and biomass. Community analysis shall also include but not be limited to, the following: number of species per 0.1 m<sup>2</sup>, total number of species per station, total numerical abundance, biomass, infaunal trophic index, Swarz' 75% dominance index, Shannon-Weiner's diversity index, and Margalef's Species Richness. The Discharger shall also conduct additional analysis, as appropriate, to elucidate temporal and spatial trends in the data.

### C: Demersal Fish and Invertebrate Monitoring

The Discharger shall conduct trawls to assess the populations of demersal fish and epibenthic macroinvertebrates, and to determine whether differences exist between populations near the outfall diffuser and populations found outside the zone of initial dilution. Trawling shall be conducted once every 24 months, with the first trawling event to take place within one year of commencement of production of pulp by the Discharger. ~~Trawling shall be conducted every other calendar year, beginning in 2009, with a~~ Duplicate trawls shall be conducted at all trawl stations (Table E-1C). Trawls shall be conducted using a Marinovich 7.62 meter (25 ft) head rope otter trawl having 3.8 cm (1.5 in) body mesh and 0.6 cm (0.25 in) cod-end liner mesh, or equivalent. Trawls shall be towed along the 11.6 m (38 ft) depth contour for a duration of 10 minutes at a uniform speed of between 2.0 and 2.5 knots. Necessary steps shall be taken to ensure that the second trawl at each station covers the same distance but does not sweep the same path as the first trawl or cover the stations sampled for benthic sediments and infauna.

Fish and macroinvertebrates collected by each trawl shall be identified to the lowest taxon possible. At all stations, community structure shall be conducted. Community structure analysis shall consist of: the wet weight of each species, number of individuals per species, total numerical abundance, species richness, species diversity, and other statistical analysis, as necessary, to compare monitoring results with previous studies in the vicinity of the outfall. Abnormalities and disease symptoms (e.g., fin erosion, external lesions, tumors, and parasites) shall also be recorded and itemized.

#### **D. Bioaccumulation Monitoring**

Within one year of commencement of production of pulp by the Discharger~~Beginning in calendar year 2009~~, muscle and hepatopancreas tissue of Dungeness crabs (*Cancer magister*) shall be analyzed for HCH, DDT, Aldrin, and TCDD equivalents. Collection of the crabs by trapping or trawl for tissue analysis shall occur near trawl stations T3 and T5. At each station, three composite samples shall be prepared for each tissue type. Each composite sample shall consist of tissues from at least six Dungeness crabs of similar size. If six Dungeness crabs are not caught at each station, the Discharger shall collect and analyze muscle and liver tissues from trawl-caught English sole (*Parophrys vetulus*). If neither Dungeness crabs nor English sole are caught in sufficient number, the Discharger may nominate other available species to fulfil the requirements as necessary. Any substitutions must be approved by the Regional Water Board and the California Department of Fish and Game prior to analysis. Results from muscle and tissue analyses shall be compared to results from analyses of muscle and tissue samples collected at a reference station outside the influence of the discharge

### **IX. OTHER MONITORING REQUIREMENTS**

#### **A. Production Reporting Requirements**

- ~~1. The Discharger shall notify the Regional Water Board at least two business days prior to a change in production from bleached to unbleached pulp, or vice versa, and provide the anticipated rate of production and the duration the change in production is expected to continue.~~
21. The Discharger shall report, in the monthly self monitoring report, the daily production type (i.e., bleached or unbleached), the daily and monthly average production levels, and the limitations and standards applicable to that production type.

32. Pounds of market pulp produced shall be reported daily on an air dry basis (10% moisture content.)

4. ~~ISO brightness of the daily production shall also be reported.~~

53. Compliance with daily maximum effluent limitations shall be determined from mass emission rates calculated using ~~composite effluent concentrations with the flow and weight of pulp produced on the day of sample collection, as follows:~~

lbs/day = 8.34 x C x Q, where C is the result of the daily concentration in mg/L and Q is the daily flow rate in MGD.

6. ~~Daily mass emission rate of total suspended solids during production of unbleached pulp shall be determined from the daily mass of solids computed at monitoring point EFF 001 (i.e., without consideration of the mass of suspended solids discharged from the water treatment plant, as measured at EFF 002).~~

7. ~~Daily mass emission rate of total suspended solids during production of bleached pulp shall be determined from the daily mass of solids computed at monitoring point EFF 001 plus the daily mass of solids computed at monitoring point EFF 002.~~

84. Compliance with monthly average effluent limitations applicable during pulp production shall be determined by computing a mass emission rate using ~~total discharge~~ the average monthly flows and total pounds of pulp produced with and the average of all daily concentrations obtained within a calendar month, as follows:

$$\text{Monthly Discharge (lbs/day)} = 8.34 \frac{\sum_{i=1}^N Q_i C_i}{N}$$

Where N is the number of days of pulp production in any calendar month. Q<sub>i</sub> and C<sub>i</sub> are the flow rate (in MGD) and the constituent concentration (in mg/L), respectively, that are associated with each of the N days in any calendar month.

95. When both bleached and unbleached pulp are produced in a single calendar month, monthly mass emission rates shall be ~~determined~~ calculated separately for each pulp product, as follows:

$$\text{Unbleached Monthly Discharge (lbs/day)} = 8.34 \frac{\sum_{i=1}^N Q_i C_i}{N}$$

Where N is the number of days of unbleached pulp production in any calendar month.  $Q_i$  and  $C_i$  are the flow rate (in MGD) and the constituent concentration (in mg/L), respectively, that are associated with each of the N days in any calendar month in which unbleached pulp is produced.

$$\text{Bleached Monthly Discharge (lbs/day)} = 8.34 \sum_{i=1}^N Q_i C_i$$

Where N is the number of days of bleached pulp production in any calendar month.  $Q_i$  and  $C_i$  are the flow rate (in MGD) and the constituent concentration (in mg/L), respectively, that are associated with each of the N days in any calendar month in which bleached pulp is produced.

~~from averaged concentrations measured on days of bleached pulp production multiplied by the averaged discharge flows of all days of bleached pulp production; and from averaged concentrations measured on days of unbleached pulp production multiplied by the averaged discharge flows on all days of unbleached pulp production. The calculated mass emission rate is then compared to the applicable average monthly effluent limitation.~~

## **B. Outfall and Diffuser Monitoring Requirements**

1. At least once before the permit expiration date, the Discharger shall conduct a survey of the outfall and diffuser port system to identify leaks and port blockages and to assess flow distribution. A report documenting their condition shall be submitted within 90 days of completing the inspection, but no later than 180 days prior to the expiration date of this Order.

## **X. REPORTING REQUIREMENTS**

### **A. General Monitoring and Reporting Requirements**

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional

Water Board by letter when it returns to compliance with the compliance time schedule.

#### **B. Self Monitoring Reports (SMRs)**

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved under 40 CFR Part 136 or as specified in this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

**Table E-89. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	<u>upon commencement of water flows through the Facility</u> June 10, 2010	All	Submit with monthly SMR
Daily	<u>upon commencement of water flows through the Facility</u> June 10, 2010	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
Weekly	<u>the first Sunday after commencement of water flows through the Facility</u> June 13, 2010	Sunday through Saturday	Submit with monthly SMR
Monthly	<u>the first day of the month following commencement of pulp production</u> July 1, 2010	1 <sup>st</sup> day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Quarterly	<u>the first day of the quarter following commencement of pulp production</u> July 1, 2011	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	First day of second calendar month following month of sampling
Semiannually	<u>within six months following commencement of pulp production</u> July 1, 2011	January 1 through June 30 July 1 through December 31	First day of second calendar month following month of sampling
Annually	<u>within one year of commencement of production of pulp by the Discharger</u> July 1, 2011	January 1 through December 31	March 1
Biennially	<u>within one year of commencement of production of pulp by the Discharger</u> January 1, 2011	Every other year <del>beginning in 2011</del>	Submit with Annual Report

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not

Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
  - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. The Discharger shall submit SMRs in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The reported data shall include calculation of all effluent limitations that require averaging, taking of a median or other computation. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
  - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:
    - (1) Facility name;
    - (2) WDID;
    - (3) Applicable period of monitoring and reporting;
    - (4) Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation);

- (5) Corrective actions taken or planned; and
- (6) The proposed time schedule for corrective actions.

- c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

**North Coast Regional Water Board  
5550 Skylane Blvd., Suite A  
Santa Rosa, CA 95403**

### **C. Discharge Monitoring Reports (DMRs)**

- 1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
- 2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

<b>Standard Mail</b>	<b>FedEx/UPS/ Other Private Carriers</b>
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15 <sup>th</sup> Floor Sacramento, CA 95814

- 3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of EPA Form 3320-1.

### **D. Other Reports**

- 1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C.2 and 3 of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date in

compliance with SMR reporting requirements described in subsection X.B. above.

2. Annual Report. The Discharger shall submit an Annual Report to the Regional Water Board for each calendar year. The report shall be submitted by March 1st of the following year. The report shall, at a minimum, include the following:
  - a. Both tabular and, where appropriate, graphical summaries of the monitoring data and disposal records from the previous year. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved under Part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and a report of the data submitted with the SMR.
  - b. A comprehensive discussion of the facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.
  - c. A summary report of source control activities completed during the calendar year, in accordance with Special Provisions, VI.C.5.b of the Order.
  - d. A summary report, if applicable, of the amount of sludge or biosolids placed in a landfill and the landfill(s) which received the sludge or biosolids, in accordance with Special Provisions, VI.C.5.c(4) of the Order.

#### **E. Spills and Overflows Notification**

1. All spills equal to or in excess of 1,000 gallons or any size spill that results in a discharge to a drainage channel or a surface water:
  - a. As soon as possible, but not later than **two (2) hours** after becoming aware of the discharge, the Discharger shall notify the State Office of Emergency Services (OES), the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas, and the Regional Water Board<sup>4</sup>.

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<sup>4</sup> The contact number for spill reporting for the Office of Emergency Services is (800) 852-7550. The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to OES will satisfy the 2 hour notification requirement for the Regional Water Board.

Information to be provided verbally to the Regional Water Board includes:

- i. Name and contact information of caller;
  - ii. Date, time and location of spill occurrence;
  - iii. Estimates of spill volume, rate of flow, and spill duration;
  - iv. Surface water bodies impacted, if any;
  - v. Cause of spill;
  - vi. Cleanup actions taken or repairs made; and
  - vii. Responding agencies.
- b. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of a discharge, the Discharger shall submit to the Regional Water Board a certification that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas have been notified of the discharge. For the purpose of this requirement, "certification" means an OES certification number and, for the local health department, name of local health staff, department name, phone number and date and time contacted.
- c. Within **five (5) business days**, the Discharger shall submit a written report to the Regional Water Board office. The report must include all available details related to the cause of the spill and corrective action taken or planned to be taken, as well as copies of reports submitted to other agencies.

Information to be provided in writing includes:

- i. Information provided in verbal notification;
  - ii. Other agencies notified by phone;
  - iii. Detailed description of cleanup actions and repairs taken; and
  - iv. Description of actions that will be taken to minimize or prevent future spills.
- d. In the cover letter of the monthly monitoring report, the Discharger shall include a brief written summary of the event and any additional details related to the cause or resolution of the event, including, but not limited to results of any water quality monitoring conducted.
2. Discharges less than 1,000 gallons that do not reach a drainage channel or a surface water:

Freshwater Tissue Company.  
Samoa Pulp Mill  
ORDER NO. R1-2010-0033  
NPDES NO. CA0005894

- a. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of the discharge, the Discharger shall notify the Regional Water Board and provide the applicable information specified in requirement 1.A of this section.
- b. In the cover letter of the monthly monitoring report, the Discharger shall include a written description of the event.

## ATTACHMENT F – FACT SHEET

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## ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

### I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

**Table 1. Facility Information**

<b>WDID</b>	1B77005OHUM
<b>Discharger</b>	Freshwater Tissue Company
<b>Name of Facility</b>	Samoa Pulp Mill
<b>Facility Address</b>	1 TCF Drive
	Samoa CA 95564
	Humboldt County
<b>Facility Contact, Title and Phone</b>	Robert Simpson, President, (707) 441-28017511
<b>Authorized Person to Sign and Submit Reports</b>	Robert Simpson, David K.K. Tsang, Chief Executive Officer, (707) 443-2801
<b>Mailing Address</b>	PO Box 248, Samoa, CA 95564
<b>Billing Address</b>	PO Box 248, Samoa, CA 95564
<b>Type of Facility</b>	Industrial with 2611 SIC code
<b>Major or Minor Facility</b>	Major
<b>Threat to Water Quality</b>	1
<b>Complexity</b>	A
<b>Pretreatment Program</b>	No
<b>Reclamation Requirements</b>	No
<b>Facility Permitted Flow</b>	Not Applicable
<b>Facility Design Flow</b>	20 million gallons per day
<b>Watershed</b>	Eureka Plain Hydrologic Unit 110
<b>Receiving Water</b>	Pacific Ocean
<b>Receiving Water Type</b>	Ocean waters

- A. Freshwater Tissue Company (hereinafter Discharger) is the owner and operator of the Samoa Pulp Mill (hereinafter Facility).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. The Discharger filed a report of waste discharge and submitted an application for Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on January 27, 2010.
- C. The Facility will discharge wastewater to the Pacific Ocean, a water of the United States. The discharge was previously regulated by Order R1-2004-0047 for Evergreen Pulp, Inc., which was terminated on March 12, 2009. The terms and conditions of the new Waste Discharge Requirements and NPDES permit, adopted pursuant to this Order, become effective on June 10, 2010.

## II. FACILITY DESCRIPTION

The Samoa pulp mill will manufacture approximately 700 air dried tons of kraft market pulp per day from wood chips obtained from sources in Northern California. The mill has the capability to produce both unbleached pulp and totally-chlorine-free (TCF) bleached pulp. The kraft pulp process at the Facility involves the separation of lignin from the cellulose fibers in the wood chips through a chemical delignification process in a high temperature digester and an oxygen delignification stage, post digestion, to remove additional lignin from the pulp. The partially delignified pulp is rinsed, dried and sold as brown stock (unbleached pulp) or rinsed and pumped to a bleach plant to remove the remaining lignin from the cellulose fibers for sale as a brighter final pulp product (bleached pulp). The spent chemicals and dissolved lignin rinsed from the pulp are recycled to a chemical recover system. The TCF bleaching process at the Samoa Pulp Mill uses a mixture of oxygen, hydrogen peroxide, sodium hydroxide, and specialty chemicals instead of chlorine or other chlorine compounds. Internal process water is pumped from the Mad River and clarified in the Facility's water treatment plant prior to its use in pulp processing.

### A. Description of Wastewater and Sludge Treatment or Controls

**Process Wastewater.** Wastewaters generated from the facility include countercurrent pulp wash-water, black-liquor evaporator condensates, blow-down from the recovery boiler, and spent bleaching solutions, and sludge from the raw water treatment plant clarifiers. Wastewaters also include wastewater from maintenance activities during pulp production, scheduled maintenance shutdowns, and unscheduled shutdown periods. Other authorized discharges include fresh water discharged through the outfall to maintain flow in the outfall and storm water from the pulp mill site, which is authorized

and conditioned under general waste discharge requirements for industrial storm water. Effluent flows vary directly with pulp production rate, and inversely with raw water quality and the relative success of process stream recycle and spill prevention and containment. The effluent pump station and discharge outfall system are designed to convey up to 20 million gallons per day, on average. The average effluent flow from February 2005 to August 2008 was 14.0 million gallons per day.

**Water Treatment Plant.** The Facility is supplied with source water for pulp processing with surface water collected in intakes on the Mad River and pumped approximately ten miles to the water treatment plant at the Facility. Water treatment facilities include clarifiers, filters and softeners. The Discharger will use synthetic polymers to aid in the removal of solids from the source water prior to its use as process water for pulp production. The daily volume of clarifier solids generated at the Facility varies greatly from day to day, and the solids load delivered to the ocean is weather dependent, with significantly higher loadings during wet weather. According to the report of waste discharge, the water treatment plant contributes, on average, about 0.3 mgd of flow to the effluent discharge.

**Other Wastewaters.** Other authorized discharges include fresh water discharged through the outfall to maintain flow in the outfall and storm water from the pulp mill site. The discharge of storm water through the ocean outfall is authorized and conditioned under general waste discharge requirements for industrial storm water and contributes approximately 0.1mgd of flow to the effluent discharge.

## **B. Discharge Points and Receiving Waters**

Untreated wastewater and other authorized discharges are discharged to the Pacific Ocean at 40° 48' 49" 2810" North, 124° 42' 13' 2432" West through a multi-port diffuser (outfall 001) approximately 2,400 meters offshore at a depth of approximately 25 meters.

## **C. Summary of Previous Requirements and Self-Monitoring Data**

Effluent limitations for Total Suspended Solids and five-day biochemical oxygen demand (BOD<sub>5</sub>) contained in the previous Order for Evergreen Pulp, Inc. for discharges from Discharge Point 001 (Monitoring Location EFF-001 and Monitoring Location EFF-002) and representative monitoring data from the term of the previous Order are as follows:

**Table 2. Historic Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitation			Monitoring Data (From July 2004 – To December 2007)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Outfall No. 001 (From July 2004 – To December 2007)							
Total Suspended Solids	lbs/d	22,960	---	42,560	32,754	---	103,437
BOD <sub>5</sub>	lbs/d	11,270	---	21,630	33,920	---	55,135
Outfall No. 101 (From January 2005 – To September 2008)							
Total Suspended Solids							
Oct. – Apr.	lbs/d	70,000		400,000	60,000	---	132,000
May – Sept.	lbs/d	40,000		400,000	8,000	---	20,000

Effluent limitations for Outfall No. 001 were based on Effluent Limitation Guidelines and Standards for the Pulp, Paper, and Paperboard Point Source Category set forth in 40 CFR 430.22 (Bleached Kraft Pulp) and an anticipated pulp production rate of 700 average dry tons per day. Effluent limitations for Outfall No. 101 were based on best professional judgment using long-term historical discharge monitoring data.

#### **D. Compliance Summary**

##### **Pulp Mill Wastewater Discharges (Outfall No. 001)**

For the 35 months from February 2005 through December 2007 the pulp mill, while under operation by Evergreen Pulp Inc. and producing only unbleached pulp, exceeded the monthly average BOD<sub>5</sub> limitation at Discharge Point 001 for eleven months. The daily maximum BOD<sub>5</sub> was exceeded for four days and the daily maximum total suspended solids limitation was exceeded for seven days. In addition to exceedances of BOD<sub>5</sub> and total suspended solids limitations, the discharge exceeded the monthly average Aldrin concentration limitation for one month. In January 2008, the Discharger resumed the manufacture of Totally Chlorine Free (TCF) bleached pulp in addition to unbleached pulp. For the nine months of operation in 2008 (January – September), until closure of the mill in October 2008, the discharge from the Pulp Mill exceeded the monthly average BOD<sub>5</sub> limitation for all 9 months of operation and the daily maximum BOD<sub>5</sub> limitation for 143 days.

Administrative Civil Liability Order No. R1-2009-0009 was adopted by the Regional Water Board on January 29, 2009 for permit violations for the period from March 1, 2005 to December 31, 2007. The Order assessed both discretionary and mandatory minimum penalties for the violations in the amount of \$463,000, pursuant to Water Code section 13385, subdivisions (c), (h), and (i). Evergreen Pulp Inc., failed to fulfill the

obligations of this Order. The matter has been referred to the Office of the Attorney General for enforcement.

Administrative Civil Liability Order No. R1-2009-0032 was adopted by the Regional Water Board on April 23, 2009 for permit violations for the period from January 1, 2008 to December 31, 2008. The Order assessed both discretionary and mandatory minimum penalties for the violations in the amount of \$453,000, pursuant to Water Code section 13385, subdivisions (c), (h), and (i). Evergreen Pulp Inc., failed to fulfill the obligations of this Order. The matter has been referred to the Office of the Attorney General for enforcement.

#### **Water Treatment Plant Discharge (Outfall 101)**

During the term of the previous permit, the Facility was in continuous compliance with effluent limitations for total suspended solids at Outfall No. 101.

### **E. Planned Changes**

The Discharger has proposed to design and construct a conventional activated sludge wastewater treatment plant to reduce effluent BOD<sub>5</sub> loading to approximately 1,950 lbs/day as a monthly average under anticipated pulp production rates. Design of the system would include two new effluent pump stations, effluent cooling towers, a 7 million gallon activated sludge reactor, two 130-foot diameter secondary clarifiers, and sludge dewatering equipment. Preliminary details of the proposed system, as well as an environmental assessment of this project's other alternatives, are contained in the document titled, "Analysis of Alternatives for Reducing Effluent Biochemical Oxygen Demand," prepared by CH2MHILL for Evergreen Pulp, Inc. and submitted to the Regional Water Board on May 29, 2007.

## **III. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

### **A. Legal Authorities**

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

## B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

## C. State and Federal Regulations, Policies, and Plans

- 1. Water Quality Control Plans.** The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

**Table 3. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	<u>Existing:</u> NAV – Navigation REC1 – Water Contact Recreation REC2 – Non-contact Water Recreation COMM – Commercial and Sport Fishing WILD – Wildlife Habitat RARE – Rare, Threatened, or Endangered Species MAR – Marine Habitat MIGR – Migration of Aquatic Organisms SPWN – Spawning, Reproduction, and/or Early Development SHELL – Shellfish Harvesting AQUA – Aquaculture <u>Potential:</u> IND – Industrial Service Supply PRO – Industrial Process Supply ASBS – Preservation of Areas of Special Biological Significance

Requirements of this Order implement the Basin Plan.

- 2. Thermal Plan.** The State Water Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for coastal waters. Requirements of this Order implement the Thermal Plan.

- 3. California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

**Table 4. Ocean Plan Beneficial Uses**

Discharge Point	Receiving Water	Beneficial Uses
Outfall 001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish spawning and shellfish harvesting

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

- 4. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR § 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
- 5. Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

- 6. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations<sup>1</sup>, section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in a previous permit, with some exceptions in which limitations may be relaxed.

**D. Impaired Water Bodies on CWA 303(d) List** *(Not Applicable)*

**E. Other Plans, Policies and Regulations** *(Not Applicable)*

**IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

**A. Discharge Prohibitions**

- 1. Discharge Prohibition III A. The discharge of any waste not disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.**

This prohibition is based on the Basin Plan, previous Order, and State Water Resources Control Board Order WQO 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order WQO 2002-0012, the State Water Board found that this prohibition is acceptable in permits, but should be interpreted to apply only to constituents that are either not disclosed by the discharger or are not reasonably anticipated to be present in the discharge, but have not been disclosed by the discharger. It specifically does not apply to constituents in the discharge that do not have "reasonable potential" to exceed water quality objectives.

The State Water Board has stated that the only pollutants not covered by this prohibition are those which were "disclosed to the permitting authority and . . . can be reasonably contemplated." (In re the Petition of East Bay Municipal Utilities District et al., (State Water Board 2002) Order No. WQ 2002-0012, p. 24.) The case

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<sup>1</sup> All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

cited in that order by the State Water Board reasoned that the Discharger is liable for discharges "not within the reasonable contemplation of the permitting authority . . . , whether spills or otherwise . . . ." (*Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland* (4th Cir. 2001) 268 F.3d 255, 268.) Thus, State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the discharger and (2) can be reasonably contemplated by the Regional Water Board.

The Regional Water Board has the authority to determine whether the discharge of a constituent is "reasonably contemplated." The *Piney Run* case makes clear that the Discharger is liable for discharges "not within the reasonable contemplation of the permitting authority . . . , whether spills or otherwise . . . ." (268 F.3d 255, 268 [italics added].) In other words, whether or not the Discharger reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the Discharger disclosed the constituent to the Regional Water Board or whether the presence of the pollutant in the discharge can otherwise be reasonably contemplated by the Regional Water Board at the time of permit adoption.

**2. Discharge Prohibition III B. The discharge of any waste at any point not described in Finding II.B is prohibited.**

This prohibition is based on the Basin Plan to protect beneficial uses of the receiving waters from unpermitted discharges, and the intent of California Water Code section 13376 which requires anyone discharging or proposing to discharge pollutants to waters of the United States to file a report of the discharge in compliance with the procedures set forth in Water Code section 13260, and sections 13261 through 13265, which requires waste discharge requirements be issued for discharges to waters of the state, and set out potential to civil liability for discharging waste to waters of the State without filing a report of waste discharge and being issued a permit. This prohibition applies to spills and other unauthorized discharges of wastewater within the waste collection, treatment and disposal facilities.

**3. Discharge Prohibition III.C. The creation of a pollution, contamination, or nuisance as defined by Water Code section 13050 is prohibited.**

This prohibition is based on CWC Section 13050.

**4. Discharge Prohibition III D. The discharge of sanitary wastes to the Pacific Ocean is prohibited.**

The pulp mill has an on-site septic system for subsurface disposal of sanitary waste. The discharge of sanitary waste to the ocean outfall is not anticipated nor permitted.

## **B. Technology-Based Effluent Limitations**

### **1. Scope and Authority**

#### **a. Applicability of the Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category (40 CFR 430)**

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations<sup>2</sup> require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines and Standards for the Pulp, Paper, and Paperboard Point Source Category in Part 430.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

- Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the "cost reasonableness" of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is

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<sup>2</sup> All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Effluent limitations guidelines and standards applicable to the Samoa Pulp Mill were established on April 15, 1998 for 12 subcategories for the pulp, paper, and paperboard industry. (63 Fed. Reg. 18635).

**b. Applicability of Ocean Plan Table A Effluent Limitations.** The State Water Board established technology-based requirements in Table A of the Ocean Plan. These effluent limitations are applicable to all publicly owned treatment works and industrial discharges for which ELGs have not been established pursuant to the CWA. Because no applicable ELGs for water treatment plants exist and because the ELGs for the kraft pulp industry also do not apply to the water treatment plant, the discharge of solids from the water treatment plant is regulated under the Ocean Plan. Table A contains effluent limitations for grease and oil, suspended solids, settleable solids, turbidity, and pH.

The State Water Board may, in compliance with CEQA, subsequent to public hearing, and with the concurrence of the USEPA, grant exceptions where the State Water Board determines:

- i. The exception will not compromise protection of the ocean waters for beneficial uses, and,
- ii. The public interest will be served.

All exceptions issued by the State Water Board and in effect at the time of the Ocean Plan Triennial Review will be reviewed at that time. The State Water Board may, subsequent to a public hearing, reopen, revoke, or reissue a particular exception.

## **2. Applicable Technology-Based Effluent Limitations**

- a. **Bleached Pulp Production.** The applicable technology-based effluent (BPT) limitation guidelines for total suspended solids, BOD<sub>5</sub>, and pH for bleached kraft pulp process waste are set out in 40 CFR 430.22, as follows:

Pollutant or Pollutant Property	pounds per 1,000 pounds of product	
	1-day Maximum	30-day Average
BOD <sub>5</sub>	15.45	8.05
TSS	30.4	16.4
pH	Within the range of 5.0 to 9.0 at all times	

Final effluent limitations for total suspended solids, BOD<sub>5</sub> are expressed as a maximum mass emission rate based on pulp production rate of 700 ADT/day, as follows:

Pollutant or Pollutant Property	pounds per day	
	Daily Maximum	Monthly Average
BOD <sub>5</sub>	21,630	11,270
TSS	42,560	22,960

Compliance with effluent limitations for pH shall be determined in accordance with 40 CFR 401.17, as follows:

- i. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
  - ii. No individual excursion from the range of pH values shall exceed 60 minutes.
- b. **Adsorbable Organic Halides.** The applicable technology-based effluent (BAT) limitations for adsorbable organic halides (AOX) for bleached kraft pulp process waste are set out in 40 CFR 430.24(a)(2), as follows:

Pollutant or Pollutant Property	BAT effluent limitations (TCF)	
	1-day Maximum	Monthly Average
AOX	< ML <sup>3</sup>	---

This effluent limitation applies to each fiber line that uses exclusively TCF bleaching processes.

- c. **Biocides.** As set out in 40 CFR 430.24(d), the following additional effluent limitations (BAT) apply to all dischargers unless the Discharger certifies that it is not using these compounds as biocides:

Pollutant or Pollutant Property	pounds per 1,000 pounds of product
	1-day Maximum
Pentachlorophenol	0.0019
Trichlorophenol	0.012

The Discharger has certified that it does not use pentachlorophenol or trichlorophenol as biocides. Accordingly, effluent limitations are not required.

<sup>3</sup> "< ML" means less than the minimum level specified in 40 CFR 430.01(i) for the particular pollutant. Currently, the ML for AOX is 20 ug/L using EPA Method 1650.

- d. **Chip Washing.** As set out in 40 CFR 430.22(c), the following additional limitations (BPT) apply to bleached kraft facilities where log washing or chip washing is part of the facility operations:

Pollutant or Pollutant Property	pounds per 1,000 pounds of product	
	1-day Maximum	30-day Average
BOD <sub>5</sub>	0.2	0.1
TSS	0.6	0.3
pH	Within the range of 5.0 to 9.0 at all times	

The Discharger reports that wood chips processed to pulp are not washed prior to processing and that wash water is recycled back into to pulping process. Accordingly, effluent limitations are not required.

- e. **Unbleached Pulp Production.** The applicable technology-based effluent (BPT) guidelines for total suspended solids, BOD<sub>5</sub>, and pH for unbleached pulp process waste are set out in 40 CFR 430.32, as follows:

Pollutant or Pollutant Property	pounds per 1,000 pounds of product	
	1-day Maximum	30-day Average
BOD <sub>5</sub>	5.6	2.8
TSS	12.0	6.0
pH	Within the range of 6.0 to 9.0 at all times	

Final effluent limitations for total suspended solids, BOD<sub>5</sub> are expressed as a maximum mass emission rate based on pulp production rate of 700 ADT/day, as follows:

Pollutant or Pollutant Property	pounds per day	
	Daily Maximum	Monthly Average
BOD <sub>5</sub>	7,840	3,920
TSS	16,800	8,400

Compliance with effluent limitations for pH shall be determined, as follows:

- i. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
  - ii. No individual excursion from the ranch of pH values shall exceed 60 minutes.
- f. **Water Treatment Plant.** Technology-based effluent limitations for the discharge of settled solids from ~~for the water treatment plant~~ are contained in

Table A of the Ocean Plan. Table A contains the following effluent limitations for grease and oil, suspended solids, settleable solids, turbidity, and pH:

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
Grease and Oil	mg/L	25	40	75
Suspended Solids	Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.			
Settleable Solids	mL/L-hr	1.0	1.5	3.0
pH	standard units	Not less than 6.0 nor greater than 9.0		
Turbidity	NTU	75	100	225

State Water Board Resolution 87-103 granted the Samoa Pulp Mill an exception to the suspended solids standard in the Ocean Plan. In the resolution, the State Water Board concluded that the discharge of suspended solids does not adversely affect beneficial uses of the ocean, including marine habitat, and that compliance with the suspended solids limitation would be expensive and would cause significant disposal problems.

Effluent limitations were first established in the 1987 NPDES permit for the Samoa Pulp Mill using best professional judgment. These limitations are and based on long-term historical monitoring data and reflecting the highly variable sediment load carried by the source water, the Mad River, are retained in this Order. The following effluent limitations for suspended solids shall be met by the discharge of settled solids from the water treatment plant:

Pollutant	Total Suspended Solids	Pounds per day	
		Daily Maximum	Monthly Average
Wet Season (Oct. – Apr.)		400,000	70,000
Dry Season (May – Sept.)		400,000	4014,000

**Table 5. Summary of Technology-based Effluent Limitations Discharge Point 001**

Table 5. Summary of Technology-based Effluent Limitations Discharge					
Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Bleached Pulp					
Total Suspended Solids	lbs/day	22,960	42,560		
Biochemical Oxygen Demand	lbs/day	11,270	21,630		
pH	pH Units			5.0	9.0
Unbleached Pulp					
Total Suspended Solids	lbs/day	8,400	16,800		
Biochemical Oxygen Demand	lbs/day	3,920	7,840		

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	pH Units			6.0	9.0

## C. Water Quality-Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

NPDES regulations at 40 CFR 122.44 (d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards, including numeric and narrative objectives within a standard.

The process for determining "reasonable potential" and calculating WQBELs, when necessary, is intended to protect the designated uses of receiving waters as specified in the Basin and Ocean Plans, and achieve applicable water quality objectives and criteria that are contained in the Basin Plan and in other applicable State and federal rules, plans, and policies, including applicable water quality criteria from the Ocean Plan.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established in accordance with the requirements of 40 CFR 122.44 (d) (1) (vi), using (1) USEPA criteria guidance under CWA section 304 (a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information.

### 2. Beneficial Uses and Water Quality Criteria and Objectives

Beneficial uses for ocean waters of the North Coast Region are established by the Ocean Plan and Table 2-1 of the Basin Plan, which are substantially similar to one another. The beneficial uses of the Pacific Ocean are described in the following table.

Receiving Water	Beneficial Uses
Pacific Ocean	<b>Potential:</b> Industrial Service Supply (IND); Industrial Process Supply (PRO); Preservation of Areas of Special Biological Significance (ASBS)

Receiving Water	Beneficial Uses
	<b>Existing:</b> Navigation (NAV); Water Contact Recreation (REC1); Non-contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Wildlife Habitat (WILD); Rare, Threatened, or Endangered Species (RARE); Marine Habitat (MAR); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL); Aquaculture (AQUA); Mariculture

Water quality criteria applicable to ocean waters of the Region are established by the Ocean Plan, which includes general provisions and water quality objectives for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. These water quality objectives from the Ocean Plan are incorporated as receiving water limitations into the Order.

Table B of the Ocean Plan contains numeric water quality objectives for 83 toxic pollutants for the protection of marine aquatic life and human health. Pursuant to NPDES regulations at 40 CFR 122.44 (d) (1), and in accordance with procedures established by the Ocean Plan (2005), the Regional Water Board has performed a reasonable potential analysis (RPA) to determine the need for effluent limitations for the Table B toxic pollutants. The RPA showed "reasonable potential" for HCH, TCDD equivalents, aldrin, and total DDT; and therefore effluent limitations for these pollutants are required.

### 3. Determining the Need for WQBELs

#### a. Regional Potential Analysis

Procedures for performing a Reasonable Potential Analysis (RPA) for ocean dischargers are described in Section III. C. and Appendix VI of the Ocean Plan. In general, the procedure is a statistical method that projects an effluent data set while taking into account the averaging period of water quality objectives, the long term variability of pollutants in the effluent, limitations associated with sparse data sets, and uncertainty associated with censored data sets. The procedure assumes a lognormal distribution of the effluent data set, and compares the 95<sup>th</sup>

percentile concentration at 95 percent confidence of each Table B pollutant, accounting for dilution, to the applicable water quality criterion. The RPA results in one of three following endpoints.

Endpoint 1 – There is “reasonable potential,” and a WQBEL and monitoring are required.

Endpoint 2 - There is no “reasonable potential.” WQBELs are not required, and monitoring is required at the discretion of the Regional Water Board.

Endpoint 3 - The RPA is inconclusive. Existing WQBELs are retained, and monitoring is required.

The State Water Resources Control Board has developed a reasonable potential calculator, which is available at <http://www.waterboards.ca.gov/plnspols/docs/oplans/rpcalc.zip>. The calculator (RPcalc 2.0) was used in conducting the RPA and considers several pathways in the determination of reasonable potential.

4i. First Path

If available information about the receiving water or the discharge supports a finding of reasonable potential without analysis of effluent data, the Regional Water Board may decide that WQBELs are necessary after a review of such information. Such information may include: the facility or discharge type, solids loading, lack of dilution, history of compliance problems, potential toxic effects, fish tissue data, 303 (d) status of the receiving water, or the presence of threatened or endangered species or their critical habitat, or other information.

2ii. Second Path

If any pollutant concentration, adjusted to account for dilution, is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

3iii. Third Path

If the effluent data contains 3 or more detected and quantified values (i.e., values that are at or above the ML), and all values in the data set are at or above the ML, a parametric RPA is conducted to project the range of possible effluent values. The 95<sup>th</sup> percentile concentration is determined at 95 percent confidence for each pollutant, and compared to the most stringent applicable water quality objective to determine reasonable potential. A parametric analysis assumes that the range of possible effluent values is distributed lognormally. If the 95<sup>th</sup> percentile value is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

4iv. Fourth Path

If the effluent data contains 3 or more detected and quantified values (i.e., values that are at or above the ML), but at least one value in the data set is less than the ML, a parametric RPA is conducted according to the following steps.

- (1) If the number of censored values (those expressed as a "less than" value) account for less than 80 percent of the total number of effluent values, calculate the  $M_L$  (the mean of the natural log of transformed data) and  $S_L$  (the standard deviation of the natural log of transformed data) and conduct a parametric RPA, as described above for the Third Path.
- (2) If the number of censored values account for 80 percent or more of the total number of effluent values, conduct a non-parametric RPA, as described below for the Fifth Path. (A non-parametric analysis becomes necessary when the effluent data is limited, and no assumptions can be made regarding its possible distribution.)

5. Fifth Path

A non-parametric RPA is conducted when the effluent data set contains less than 3 detected and quantified values, or when the effluent data set contains 3 or more detected and quantified values but the number of censored values accounts for 80 percent or more of the total number of effluent values. A non-parametric analysis is conducted by ordering the data, comparing each result to the applicable water quality objective, and accounting for ties. The sample number is reduced by one for each tie, when the dilution-adjusted method detection limit (MDL) is greater than the water quality objective. If the adjusted sample number, after accounting for ties, is greater than 15, the pollutant has no reasonable potential to exceed the water quality objective. If the sample number is 15 or less, the RPA is inconclusive, monitoring is required, and any existing effluent limits in the expiring permit are retained.

b. Reasonable Potential Determination

- i. **Process Wastewater.** The following table presents results of the RPA, performed in accordance with procedures described by the Ocean Plan and summarized above, for the process wastewater from the Samoa Pulp Mill. The RPA was conducted using effluent monitoring data generated during monitoring events between August 2003 and October 2006.

The RPA endpoint for each Table B pollutant is identified. As shown in the following table, the RPA commonly leads to Endpoint 3, meaning that the RPA is inconclusive, when a majority of the effluent data is reported as ND (not detected). In these circumstances, the Regional Water Board views the "inconclusive" result as an indication of no concern for a particular pollutant; however, additional monitoring will be required for those pollutants during the term of the reissued permit.

The RPA showed "reasonable potential" for HCH, TCDD equivalents, aldrin, and total DDT; and therefore effluent limitations for these pollutants are required for Discharge Point 001.

**Table 6. Results of Reasonable Potential Analysis**

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
<b>Objectives for Protection of Marine Aquatic Life</b>					
Arsenic	8	12	12	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Cadmium	1	13	13	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorinated Phenolics	1	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Chromium (VI)	2	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Copper	3	16	12	0.5	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Cyanide	1	15	13	0.34	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Endosulfan (total)	0.009	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Endrin	0.002	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
HCH	0.004	14	8	0.48	Endpoint 1 – An effluent limitation must be developed for this pollutant. Monitoring is required.
Lead	2	16	15	0.05	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Mercury	0.04	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Nickel	5	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Non-chlorinated Phenolics	30	15	1	0.5	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Selenium	15	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Silver	0.7	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Zinc	20	16	5	8.3	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
<b>Objectives for Protection of Human Health – Noncarcinogens</b>					
1,1,1-Trichloroethane	540000	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
2,4-Dinitrophenol	4.0	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
2-Methyl-4,6-Dinitrophenol	220	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Acrolein	220	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Antimony	1200	11	11	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroethoxy)Methane	4.4	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Bis(2-Chloroisopropyl)Ether	1200	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Chlorobenzene	570	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chromium (III)	190000	15	3	0.06	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dichlorobenzenes	5100	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Diethyl Phthalate	33000	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Dimethyl Phthalate	820000	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Di-n-Butyl Phthalate	3500	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Ethylbenzene	4100	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Fluoranthene	15	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Hexachlorocyclopentadiene	58	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Nitrobenzene	4.9	16	16	ND	Endpoint 2 – An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Thallium	2	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Toluene	85000	15	5	0.11	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Tributyltin	0.0088	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
<b>Objectives for Protection of Human Health – Carcinogens</b>					
1,1,2,2-Tetrachloroethane	2.3	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,1,2-Trichloroethane	9.4	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
1,1-Dichloroethylene	0.9	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,2-Dichloroethane	28	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,2-Diphenylhydrazine	0.16	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
1,3-Dichloropropylene	8.9	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,4 Dichlorobenzene	18	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
TCDD Equivalentts	3.9E-9	17	11	2.72E-8	Endpoint 1 – An effluent limitation must be developed for this pollutant. Monitoring is required.
2,4,6-Trichlorophenol	0.29	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
2,4-Dinitrotoluene	2.6	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
3,3'-Dichlorobenzidine	0.0081	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Acrylonitrile	0.10	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Aldrin	0.000022	14	13	0.000474	Endpoint 1 – An effluent limitation must be developed for this pollutant. Monitoring is required.
Benzene	5.9	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Benzidine	6.9E-5	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Beryllium	0.033	12	12	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroethyl)Ether	0.045	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Bis(2-Ethylhexyl)Phthalate	3.5	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Carbon Tetrachloride	0.90	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlordane	2.3E-5	14	14	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorodibromomethane	8.6	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chloroform	130	15	3	0.16	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
DDT (total)	0.00017	14	10	0.00112	Endpoint 1 – An effluent limitation must be developed for this pollutant. Monitoring is required.
Dichlorobromomethane	6.2	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Dieldrin	0.00004	14	14	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Halomethanes	130	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Heptachlor	0.00005	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Heptachlor Epoxide	0.00002	13	13	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Hexachlorobenzene	0.00021	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Hexachlorobutadiene	14	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Hexachloroethane	2.5	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Isophorone	730	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
Methylene Chloride	450	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
N-Nitrosodimethylamine	7.3	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
N-Nitrosodi-n-Propylamine	0.38	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
N-Nitrosodiphenylamine	2.5	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
PAHs (total)	0.0088	16	16	ND	Endpoint 2 – An effluent limit is not required for this pollutant. Monitoring may be required as appropriate.
PCBs	1.9E-5	14	14	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Tetrachloroethylene	2.0	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Toxaphene	0.00021	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Trichloroethylene	27	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Vinyl Chloride	36	15	15	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Notes to Table 1:

ND indicates that the pollutant was not detected.

Minimum probable initial dilution for this Discharger is 115 : 1.

The Maximum Effluent Concentration is the expected concentration after complete mixing, in accordance with reasonable potential procedure in Appendix VI of the Ocean Plan.

Effluent data used for this RPA are from 2003 to 2006.

- ii. **Water Treatment Plant Discharge.** Monitoring data for Table B constituents for the discharge from the water treatment plant are not available.

#### 4. WQBEL Calculations

Based on results of the RPA, performed in accordance with methods of the Ocean Plan for discharges to the Pacific Ocean, the Regional Water Board is establishing WQBELs for HCH, TCDD equivalents, aldrin, and total DDT for the wastewater discharged through EFF-001.

As described by Section III. C of the Ocean Plan, effluent limits for Table B pollutants are calculated according to the following equation.

$$C_e = C_o + D_m (C_o - C_s)$$

Where

- $C_e$  = the effluent limitation ( $\mu\text{g/L}$ )
- $C_o$  = the concentration (the water quality objective) to be met at the completion of initial dilution ( $\mu\text{g/L}$ ).
- $C_s$  = background seawater concentration ( $\mu\text{g/L}$ ), with all metals expressed as total recoverable concentrations.
- $D_m$  = minimum probable initial dilution expressed as parts seawater per part wastewater (here,  $D_m = 115$ )

For the Samoa Pulp Mill, the calculated minimum probable initial dilution is unchanged from the previous Order (R1-2004-0047). Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. As site-specific water quality data is not available, in accordance with Table B implementing procedures,  $C_s$  equals zero for all pollutants, except the following:

**Table 7. Background Seawater Concentrations – Ocean Plan**

Pollutant	Background Seawater Concentration
Arsenic	3 $\mu\text{g/L}$
Copper	2 $\mu\text{g/L}$
Mercury	0.0005 $\mu\text{g/L}$
Silver	0.16 $\mu\text{g/L}$
Zinc	8 $\mu\text{g/L}$

Applicable water quality objectives from Table B of the Ocean Plan are as follows:

**Table 8. Water Quality Objectives–Ocean Plan**

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum	30 Day Avg
HCH	$\mu\text{g/L}$	0.004	0.008	0.012	—

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum	30 Day Avg
TCDD Equivalents	µg/L	---	---	---	0.0000000039
Aldrin	µg/L	---	---	---	0.000022
DDT	µg/L	---	---	---	0.00017

Using the equation,  $C_e = C_o + D_m (C_o - C_s)$ , effluent limitations are calculated as follows. Here,  $C_o$  is equal to zero for each effluent limitation calculation.

#### HCH

$$C_e = 0.004 + 115 (0.004 - 0) = 0.46 \text{ µg/L (6-Month Median)}$$

$$C_e = 0.008 + 115 (0.008 - 0) = 0.93 \text{ µg/L (Daily Maximum)}$$

$$C_e = 0.012 + 115 (0.012 - 0) = 1.4 \text{ µg/L (Instantaneous Maximum)}$$

#### TCDD Equivalents

$$C_e = 3.9\text{E-}9 + 115 (3.9\text{E-}9 - 0) = 4.5\text{E-}7 \text{ µg/L (30-Day Average)}$$

#### Aldrin

$$C_e = 2.2\text{E-}5 + 115 (2.2\text{E-}5 - 0) = 2.6\text{E-}3 \text{ µg/L (30-Day Average)}$$

#### DDT

$$C_e = 0.00017 + 115 (0.00017 - 0) = 0.020 \text{ µg/L (30-Day Average)}$$

**Table 9. Final WQBELs for Ocean Plan Table B Pollutants**

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum	30 Day Avg
HCH	µg/L	0.46	0.93	1.4	---
TCDD Equivalents	µg/L	---	---	---	0.00000045
Aldrin	µg/L	---	---	---	0.0026
DDT	µg/L	---	---	---	0.020

### **5. Whole Effluent Toxicity (WET)**

Federal regulations (40 CFR 122.44(d)) require that effluent limitations be established for pollutants, including whole effluent toxicity, when a discharge has the reasonable potential to cause or contribute to an exceedance of a State water quality standard, including State narrative objectives for water quality. The 2005 Ocean Plan specifies toxicity testing requirements based on the minimum initial dilution factor, expressed as parts seawater per wastewater, for the discharge. Where the minimum initial dilution of the effluent franges from 100:1 to 350:1 at the edge of the mixing zone, dischargers are required to conduct only chronic toxicity monitoring. As the Permittee's calculated minimum initial dilution is 115:1, Regional Water Board staff has determined only short-term chronic toxicity tests on the treated effluent are required.

A RPA for whole effluent toxicity was conducted in accordance with Appendix VI of the Ocean Plan using 78 monthly effluent monitoring data from January 2002 through June 2008 for the wastewater discharged through EFF-001. The test species was *Haliotis rufescens*, red abalone, and monitored the effect of the discharge on larval abalone shell development. The calculator (RPcalc 2.0) was used in conducting the RPA. The results for the RPA indicate that the one-sided, upper 95 percent confidence bound (UCB) for the 95<sup>th</sup> percentile of the effluent distribution was 0.3657. Because the calculated UCB is less than the water quality objective (before dilution) of 1.0 TUc, an effluent limitation is not required for whole effluent toxicity for the wastewater discharged through EFF-001.

Although this Order does not contain WET limitations, it establishes chronic monitoring requirements for the effluent discharge at EFF-001. If the result of any chronic test exceeds the water quality objective of 116 TUc (after minimum initial dilution), the Discharger must initiate accelerated monitoring as described in Section V of the MRP. After accelerated monitoring, if conditions of chronic toxicity are found to persist, the Discharger will be required to conduct a Toxicity Reduction Evaluation, as described in Special Provision VI.C.2.iii.

#### **D. Final Effluent Limitations**

##### **1. Satisfaction of Anti-Backsliding Requirements**

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

##### **2. Satisfaction of Antidegradation Policy**

This Order is consistent with the Antidegradation Policy. The activities allowed in accordance with these waste discharge requirements apply to an existing facility and will not result in an increased volume or concentration of waste beyond that which was permitted to discharge in accordance with the previous Order. Further, this Order permits only those discharges of waste that are compliant with USEPA effluent limitation guidelines for the pulp and paper industry. Discharges from the pulp mill will be required to maintain protection of the beneficial uses of the receiving water and comply with applicable provisions of the Basin Plan.

##### **3. Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on total suspended solids, 5-day biochemical oxygen demand, pH, turbidity, settleable solids, and grease and oil. Restrictions on these pollutants are

discussed in Fact Sheet section IV.B. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are not more stringent than required by the CWA.

**E. Interim Effluent Limitations** *(Not Applicable)*

**V. RATIONALE FOR RECEIVING WATER LIMITATIONS**

**A. Surface Water**

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The State Water Resources Control Board adopted water quality criteria as water quality objectives in the Ocean Plan. The Ocean Plan includes numeric and narrative water quality objectives for various beneficial uses. This Order contains receiving surface water limitations based on the Ocean Plan numerical and narrative water quality objectives for dissolved oxygen, floating particulates, oil and grease, pH, discoloration, natural lighting, deposition of solids, dissolved sulfides, organic materials, and nutrient materials.

**B. Groundwater** *(Not Applicable)*

**VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

**A. Internal Monitoring**

Internal monitoring in this Order consists of monthly analyses of the treated water supply prior to its use in the Pulp Mill. Monitoring of the treated water supply for adsorbable organic halides (AOX) is required to measure the contribution of this pollutant to the total waste discharge at Discharge Point 001 during bleached pulp production. For the purpose of determining compliance with effluent limitations for AOX at Monitoring Location EFF-001 during bleached pulp production, the concentration of AOX at INT-001 is subtracted from the concentration of AOX at EFF-001.

## B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. In addition, routine monitoring of the effluent and the receiving water for priority pollutants is required to periodically assess the reasonable potential of the discharge to cause or contribute to an exceedance of water quality objectives in the Ocean Plan. Appendix III of the Ocean Plan requires monitoring of Ocean Plan Table B constituents at least semi-annually. More frequent monitoring may be required using best professional judgment, with consideration given to the nature of the individual pollutant, the past record of detections in the effluent, and likelihood of the presence of the pollutant in the discharge. Effluent monitoring requirements are contained in Attachment E, Section IV of the MRP.

This Order establishes two effluent monitoring locations, EFF-001 and EFF-002. These locations are analogous to Outfall No. 001 and Outfall No. 101, respectively, in the previous permit. Monitoring Location EFF-001 monitors the combined discharge of all pulp mill process wastewaters and storm water at a location known as "Manhole 5." Monitoring Location EFF-001 is the point of compliance with technology-based and water quality-based effluent limitations for bleached and unbleached pulp process waste, with the exception of TSS during bleached pulp production (explained below). Monitoring Location EFF-002 monitors the flow, and the TSS concentration of the water treatment plant discharge prior to mixing with the process water flow in the outfall pipe (Discharge Point 001). Monitoring information from Monitoring Location EFF-002 is used to determine compliance with effluent limitations for TSS at Discharge Point 001-002 and for determining the TSS loading from the water treatment plant discharge that is added to the TSS loading from EFF-001 for compliance purposes.

### 2. Total Suspended Solids Measurements for Compliance Determination

**State Water Board Exception.** On November 17, 1987, the State Water Board issued Resolution 87-103 granting the Samoa Pulp Mill an exception to the Ocean Plan Table A effluent limitation that requires at least 75 percent removal of suspended solids from the influent before discharging waste to the ocean. This exception allowed the Discharger to subtract suspended solids from the water treatment plant from the Facility's combined effluent discharge for the purpose of demonstrating compliance with effluent limitation for suspended solids.

**Bleached Pulp Production.** When the effluent limitations guidelines were revised in 1998<sup>4</sup>, the definition of "process wastewater" at 40 CFR 430.01 (m) was modified

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<sup>4</sup> [Proposed Rules. Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category, 58 Fed. Reg. 66078, 66170 (December 17, 1993)]

to specifically include "wastewaters from water treatment and other utility operations." This modified definition was made applicable to subparts B (Bleached Papergrade Kraft and Soda) and E (Papergrade Sulfite) of the guidelines. Accordingly, the Order requires the Discharger to include the contribution of suspended solids and other Table A parameters from the water treatment plant as part of the compliance calculation during bleached pulp production.

**Unbleached Pulp Production.** Because EPA's 1998 rulemaking did not update or modify subpart C (Unbleached Kraft) of the effluent limitations guidelines, the pre-1998 definition of "process wastewater" remains applicable, when the Evergreen Samoa Pulp Mill is categorized as an unbleached kraft pulp mill. The pre-1998 definition of "process wastewater" does not address wastewaters from utility operations and has not previously been interpreted to include such wastewaters. The exception to the Ocean Plan Table A requirement for suspended solids, established by State Water Board Resolution No. 87-103, therefore, remains in effect, when the Mill is categorized as an unbleached kraft mill. Consequently, when discharging waste during production of unbleached pulp, the contribution of these pollutants to the final effluent at Discharge Point 001 is not included from the combined effluent discharge.

### **C. Whole Effluent Toxicity Testing Requirements**

Monitoring requirements for chronic toxicity are established for discharge Monitoring Location EFF-001. The toxicity monitoring requirements are included in the MRP in accordance with the 2005 Ocean Plan.

### **D. Receiving Water Monitoring**

- 1. Surface Water.** Receiving water monitoring is required to demonstrate compliance with the receiving water limitations. Compliance with receiving water limitations will be demonstrated by grab samples or measurements taken in the ocean near the point of discharge and at a point sufficiently distant from the discharge to represent background conditions.

The Discharger is required to conduct benthic monitoring in the vicinity of the outfall to assess compliance with receiving limitations related to concentrations of pollutants in marine sediments that may degrade indigenous biota or disrupt benthic communities. The monitoring requirements include sediment and infauna analysis, fish and invertebrate monitoring and bioaccumulation monitoring. The requirements for benthic monitoring, demersal fish/invertebrate monitoring, and bioaccumulation monitoring in this Order are based on the marine monitoring program conducted by the Pulp Mill in 1997, under its previous owner, Louisiana-Pacific Corporation. The scope of the monitoring in this Order is consistent with the 1997 study in order to compare data collected during the permit cycle to data collected in 1997.

## 2. Groundwater. *(Not Applicable)*

### E. Other Monitoring Requirements

1. **Production Reporting Requirements.** Daily reporting of the quantity and quality of pulp produced is required to determine which effluent limitation (unbleached kraft pulp as described at 40 CFR 430.32 or bleached papergrade kraft and soda pulp as described at 40 CFR 430.22) is appropriate and to assess compliance with that daily effluent limitation. The Permit Guidance Document, Pulp, Paper, and Paperboard Manufacturing Point Source Category (EPA-821-B-00-003) page 8-6 states:

"As part of business operations as well as permit requirements, mills record production of all final products ... Mills that manufacture market pulp typically measure this product in terms of ADT with 10 % moisture content, which is consistent with the production definition for conventional pollutants. ... some mills report market pulp production with variable moisture content. If so, [the permit writer] must either obtain the pulp moisture content information from the mill, and then normalize the pulp production to 10 % moisture content, or require the mill to do so."

Therefore, ~~Evergreen~~ Freshwater Tissue Company is required in its reporting of quantity of pulp produced to report the moisture content of its production.

~~The Order establishes tiered effluent limitations based on production type (i.e., bleached or unbleached pulp). In accordance with 40 CFR 122.45(b)(ii), because the permit includes alternative limitations based on anticipated fluctuations in production, the permit must include the following special reporting requirements such as:~~

- ~~o The permittee notifying the permitting authority at least two business days prior to the month they expect to be operating at a higher level of production and the duration this level of production is expected to continue; and~~
- ~~o The permittee reporting, in the discharge monitoring report, the level of production and the limitation and standards applicable to that level.~~

~~Section IX of the Order includes specific reporting requirements~~

2. **Outfall and Diffuser Monitoring Requirements** Periodic visual investigation of the outfall is required to confirm the structural integrity and proper operation of the discharge outfall structure. Proper operation and maintenance of the outfall structure is require to comply with requirements in 40 CFR 122.41(e).

## VII. RATIONALE FOR PROVISIONS

### A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D to the Order.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

### B. Special Provisions

#### 1. Reopener Provisions

- a. **Standards Revisions (Special Provisions VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, which include the following:
  - i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.
  - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. **Reasonable Potential (Special Provisions VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Discharger governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective or adversely impacting water quality and/or the beneficial uses of receiving waters.
- c. **Tiered Effluent Limitations (Special Provisions VI.C.1.d).** Effluent limitations for BOD and total suspended solids in this Order are based on a long term pulp

production rate of 700 ADT/day. Some variability in pulp production is expected to occur during the life of the Order. However, if as a result of market trends, market forces, or company plans, the pulp production rates change significantly during the life of this Order, the Regional Water Board may reopen this Order and make modifications in production-based effluent limitations for BOD and total suspended solids. As a general rule of thumb, up to a 20 percent fluctuation in production is within the range of normal variability.

## **2. Special Studies and Additional Monitoring Requirements**

### **a. Toxicity Reduction Requirements (Special Provision VI. C. 2. a)**

In addition to routine toxicity monitoring, Special Provision VI. C. 2. b requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan within 180 days of the effective date of this Order for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with appropriate USEPA guidance. Numerous guidance documents are available, as identified below.

1. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, (EPA/833B-99/002), August 1999.
2. Generalized Methodology for Conducting Industrial TREs, (EPA/600/2-88/070), April 1989.
3. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/005F, February 1991.
4. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA 600/6-91/005F, May 1992.
5. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity, Second Edition, EPA 600/R-92/080, September 1993.
6. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
7. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.

8. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
9. Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991

### **3. Best Management Practices and Pollution Prevention**

#### **a. Pollution Minimization Program**

Provision VI. C. 3. a is included in this Order pursuant to section III. C. 9 of the Ocean Plan. A Pollutant Minimization Program is required when there is evidence that a toxic pollutant is present in effluent at a concentration greater than an applicable effluent limitation:

#### **b. Spill Prevention and Control Program**

Provision VI.C.3.b is included in this Order pursuant to 40 CFR 430.03, which requires owners or operators of bleached papergrade kraft, soda, and sulfite mills to implement site-specific BMPs to prevent or otherwise control leaks and spills of spent pulping liquors, soap, and turpentine, and to control intentional diversions of these materials. The Discharger should review and evaluate its BMP plan at least once every five years or more often whenever there is a change in mill design, operation or maintenance that materially affects the potential for leaks or spills.

### **4. Construction, Operation, and Maintenance Specifications *(Not Applicable)***

### **5. Special Provisions for Municipal Facilities (POTWs Only) *(Not Applicable)***

### **6. Other Special Provisions *(Not Applicable)***

### **7. Compliance Schedules *(Not Applicable)***

## **VIII. PUBLIC PARTICIPATION**

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for ~~Evergreen Pulp~~ Freshwater Tissue Company, Inc., Samoa Pulp Mill. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

### **A. Notification of Interested Parties**

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and

has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through publication in the Eureka Daily Standard on September 19, 2008 and through posting on the Regional Water Board's Internet site at

[http://www.waterboards.ca.gov/northcoast/board\\_decisions/tentative\\_orders/](http://www.waterboards.ca.gov/northcoast/board_decisions/tentative_orders/) beginning on September 19, 2008.

#### **B. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on **May 1, 2010**.

#### **C. Public Hearing**

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **July 15, 2010**

Time: **8:30 AM, or as soon as possible thereafter as noticed in the final agenda**

Location: **Regional Water Board Office  
5550 Skylane Blvd., Suite A  
Santa Rosa, CA 95403**

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/northcoast/> where you can access the current agenda for changes in dates and locations.

#### **D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

Freshwater Tissue Company.  
Samco Pulp Mill  
ORDER NO. R1-2010-0033  
NPDES NO. CA0005894

State Water Resources Control Board  
Office of Chief Counsel  
P.O. Box 100, 1001 I Street  
Sacramento, CA 95812-0100

#### **E. Information and Copying**

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (707)576-2220.

#### **F. Register of Interested Persons**

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

#### **G. Additional Information**

Requests for additional information or questions regarding this order should be directed to Charles Reed at (707) 576-2752.

California Regional Water Quality Control Board  
North Coast Region

CEASE AND DESIST ORDER NO. R1-2010-0039

NPDES PERMIT NO. CA0005894  
ID NO. 1B77005OHUM

REQUIRING FRESHWATER TISSUE COMPANY TO CEASE AND DESIST FROM  
DISCHARGING OR THREATENING TO DISCHARGE EFFLUENT IN VIOLATION  
OF WASTE DISCHARGE REQUIREMENTS ORDER NO. R1-2010-0033

Humboldt County

The Regional Water Quality Control Board, North Coast Region (Regional Water Board) finds that:

1. Freshwater Tissue Company (hereinafter Discharger) is the owner and operator of the Samoa Pulp Mill (hereinafter Facility).
2. On January 27, 2010, the Discharger filed a report of waste discharge and submitted an application for Waste Discharge Requirements (WDRs) and a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of process wastewater associated with the production of chlorine-free bleached and unbleached kraft pulp. The application was deemed complete on March 26, 2010.
3. The Facility has a design flow of 20.0 million gallons per day of wastewater created during the pulp production process, the energy and chemical recovery processes, and the raw water treatment process. The discharge will occur to the Pacific Ocean, a water of the United States, through an outfall that is approximately 8,200 feet long and provides an initial dilution rate of 115:1.
4. Wastewaters generated from the facility include countercurrent pulp wash-water, black-liquor evaporator condensates, blow-down from the recovery boiler, spent bleaching solutions, and sludge from the raw water treatment plant clarifiers. Wastewaters also include wastewater from maintenance activities during pulp production, scheduled maintenance shutdowns, and unscheduled shutdown periods. Other authorized discharges include fresh water discharged through the outfall to maintain flow in the outfall and storm water from the pulp mill site. The effluent pump station and discharge outfall system are designed to convey up to 20 million gallons per day, on average.
5. Raw surface water used in the pulp making process is drawn directly from the Mad River and treated in an onsite water treatment plant to remove naturally-occurring mud and silt entrained in the river water prior to use in the mill. The water treatment plant consists of conventional circular clarifiers that settle the mud and silt with the aid of proprietary additives that improve solids removal. Solids removed in the water treatment plant clarifiers are conveyed to the outfall pipe where they are combined with process wastewaters and discharged to the ocean.

6. The discharge was previously regulated by WDR Order R1-2004-0047 for Evergreen Pulp, Inc., which was terminated on March 12, 2009. A new WDR and NPDES permit for Freshwater Tissue Company, WDR Order No. R1-2010-0033 (NPDES Permit No. CA0005894), becomes effective on July 15, 2010.
7. Section 301(b) of the Clean Water Act (CWA) and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (CFR) require that NPDES permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. WDR Order No. R1-2010-0033 includes minimum federal technology-based requirements based on Effluent Limitations Guidelines (ELGs) and Standards for the Pulp, Paper, and Paperboard Point Source Category contained in 40 CFR 430.
8. WDR Order No. R1-2010-0033 also contains technology-based effluent limitations for grease and oil, settleable solids, turbidity, and pH for the discharge of solids removed from the water treatment plant and discharged to the ocean, as required in Table A of the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan)<sup>1</sup>. WDR Order No. R1-2010-0033 does not include a requirement to comply with the suspended solids standard in the Ocean Plan which requires dischargers to remove 75 percent of solids from the influent stream before discharging to the ocean. The Samoa Pulp Mill, pursuant to State Water Resources Control Board Resolution 87-103, is granted an exception to this Ocean Plan standard. The previous permit did not contain any effluent limitations required by the Ocean Plan.
9. Based on an analysis of effluent monitoring data from 2005 through 2008, the discharge from the Facility cannot comply with:
  - final effluent limitations in WDR Order No. R1-2010-0033 for five-day biochemical oxygen demand (BOD<sub>5</sub>) in section A.1 during production of bleached pulp;
  - effluent limitations for BOD<sub>5</sub> and total suspended solids (TSS) in section A.2 of the Permit during production of unbleached pulp; and
  - effluent limitations for settleable solids and turbidity in section A.3 of the Permit for the discharge of solids removed from the water treatment plant.
10. Requirements in Order No. R1-2010-0033 that are threatened to be violated are:
  - A. Effluent Limitations – Discharge Point 001
    1. **Final Effluent Limitations during Bleached Pulp Production – Discharge Point 001**

<sup>1</sup> Table A effluent limitations apply only to publicly owned treatment works and industrial discharges for which Effluent Limitation Guidelines have not been established pursuant to sections 301, 302, 304, or 306 of the Federal Clean Water Act. (California Ocean Plan)

During manufacture of bleached pulp, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP:

**Table 7. Effluent Limitations – Bleached Pulp**

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median
TSS	lbs/day	22,960		42,560			
BOD <sub>5</sub>	lbs/day	11,270		21,630			

**2. Final Effluent Limitations during Unbleached Pulp Production – Discharge Point 001**

During manufacture of unbleached pulp, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF-001 as described in the attached MRP.

**Table 8. Effluent Limitations – Unbleached Pulp**

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median
TSS	lbs/day	8,400		16,800			
BOD <sub>5</sub>	lbs/day	3,920		7,840			

**3. Final Effluent Limitations for the Raw Water Discharge from the Water Treatment Plant– Discharge Point 001**

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001 with compliance measured at Monitoring Location EFF-002 as described in the attached MRP.

**Table 9. Final Effluent Limitations – Water Treatment Plant**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	Six-Month Median
Settleable Solids	mL/L-hr	1.0	1.5	3.0	---	---
Turbidity	NTU	75	100	225	---	---

11. Section 13301 of the California Water Code states "When a regional board finds that a discharge of waste is taking place, or threatening to take place, in violation

of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventative action."

12. On March 22, 2010, the Discharger submitted a request for a forty-month compliance schedule to give the Discharger time to obtain required local development permits, for the design and construction of a conventional activated sludge wastewater treatment plant to reduce effluent BOD<sub>5</sub> loading. Preliminary details of the proposed wastewater treatment facilities, as well as an environmental assessment of this project and other alternatives, are contained in the document titled, "Analysis of Alternatives for Reducing Effluent Biochemical Oxygen Demand," prepared by CH2MHILL for Evergreen Pulp, Inc. and submitted to the Regional Water Board on May 29, 2007. Design of the system will include two new effluent pump stations, effluent cooling towers, a 7 million gallon activated sludge reactor, two 130-foot diameter secondary clarifiers, and sludge dewatering equipment. According to the alternatives analysis, wastewater treatment facilities will reduce effluent BOD<sub>5</sub> loading to approximately 1,950 lbs/day as a monthly average under anticipated pulp production rates.
13. On June 25, 2010, the Discharger submitted a letter stating that it was impossible to immediately comply with the newly incorporated final effluent limitations contained in the NPDES permit for settleable solids and turbidity for discharges of solids removed from the water treatment plant and discharged through the ocean outfall. The Discharger requested a time schedule to provide time to investigate a strategy for compliance. Tasks in the time schedule proposed by the Discharger include characterization of the solids discharge, treatment technology investigation, engineering design, contract bidding, construction, and final compliance testing.
14. Pursuant to California Water Code (Water Code) section 13385(j)(3), Mandatory Minimum Penalties (MMPs) for violations of effluent limitations for BOD<sub>5</sub> and TSS during the production of unbleached pulp and violations of effluent limitations for settleable solids and turbidity applicable to the discharge from the water treatment plant will not apply if the Regional Water Board finds that:
  - a. The Cease and Desist Order is issued on or after July 1, 2000, and specifies the actions that the discharger is required to take in order to correct the violations;
  - b. The regional board finds that the discharger is not able to consistently comply with one or more of the effluent limitations established in the waste discharge requirements applicable to the waste discharge because the effluent limitation is a new or more stringent regulatory requirement that has become applicable to the waste discharge after the effective date of the waste discharge requirements and after July 1, 2000, new or modified control measures are necessary in order to comply with the effluent limitation, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days;

- c. The regional board establishes a time schedule for bringing the waste discharge into compliance with the effluent limitation that is as short as possible, taking into account the technological, operational, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitation; and
- d. The discharger has prepared and is implementing in a timely and proper manner, a pollution control and prevention plan.

15. Effluent Limitations for BOD<sub>5</sub> During the Production of TCF Bleached Pulp

Although monitoring data from 2008 indicates that the Discharger is not likely to consistently comply with all final effluent limitations for BOD<sub>5</sub> during the production of TCF bleached pulp, the Discharger does not meet the requirements of Water Code section 13385(j)(3) and cannot obtain protection from MMPs for violations of the effluent limitations for BOD<sub>5</sub> during the production of bleached pulp. The final effluent limitations for BOD<sub>5</sub> during the production of bleached pulp in WDR Order No. R1-2010-0039 are not "new," nor are they more stringent than those required by the Facility's previous Waste Discharge Requirements, Order No. R1-2004-0047 (NPDES Permit No. CA0005894), adopted on June 22, 2004. They are the same limits that were required of the Facility in its last permit.

16. Effluent Limitation for BOD<sub>5</sub> and TSS During the Production of Unbleached Pulp

During the production of unbleached pulp, the Discharger meets the requirements of Water Code section 13385(j)(3), and therefore, MMPs for violations of the effluent limitations for BOD<sub>5</sub> and TSS will not apply because:

- a. This CDO is issued after July 1, 2000, and specifies the actions the Discharger is required to take to correct the violations;
- b. The final effluent limitations for BOD<sub>5</sub> and TSS during the production of unbleached pulp are newly established in waste discharge requirements for this Facility and are more stringent than the effluent limitations for BOD<sub>5</sub> and TSS during bleached pulp production, which were the effluent limitations in effect in previous permits for this Facility, irrespective of whether the final product was bleached or unbleached pulp. The Discharger has demonstrated that it will not be able to consistently comply with final effluent limitations for BOD<sub>5</sub> and TSS during the production of unbleached pulp. To ensure consistent compliance, the Discharger will need to implement control measures, specifically the Discharger will need to design and construct a conventional activated sludge wastewater treatment plant to reduce effluent BOD<sub>5</sub> loading. It will take the Discharger in excess of 30 calendar days to design and install the treatment plant;
- c. This Order establishes a time schedule for bringing the Facility into compliance with the effluent limitations for BOD<sub>5</sub> and TSS during the production of unbleached pulp that is as short as possible. The Discharger submitted a

proposed project milestone schedule via email on March 11, 2010 that provided a time schedule for the Discharger to obtain required local development permits, and design and construct a conventional activated sludge wastewater treatment plant to reduce effluent BOD<sub>5</sub> loading. The Discharger submitted a letter dated April 21, 2010 that demonstrated to the satisfaction of the Regional Water Board Executive Officer that the time schedule is as short as practicable based on sound engineering judgment and experience with similar projects; and

- d. The Discharger will prepare and implement a best management practices plan (BMPP) to identify and control pollution. The BMPP will also serve as a pollution prevention plan.

17. Effluent Limitations for Settleable Solids and Turbidity Applicable to the Water Treatment Plant Discharge

When discharging solids from the water treatment plant, the Discharger meets the requirements of Water Code section 13385(j)(3), and therefore, MMPs for violations of the effluent limitations for settleable solids and turbidity will not apply because:

- a. This CDO is issued after July 1, 2000, and specifies the actions the Discharger is required to take to correct the violations;
  - b. The final effluent limitations for settleable solids and turbidity for the discharge of solids from the water treatment plant are newly established in waste discharge requirements for this Facility. The Discharger has demonstrated that it will not be able to consistently comply with these final effluent limitations for settleable solids and turbidity given the nature of the solids discharge from the water treatment plant. To ensure consistent compliance, the Discharger will need to implement control measures to remove solids from the water treatment discharge or obtain regulatory relief through an expanded Ocean Plan exception from the State Water Resources Control Board. It will take the Discharger in excess of 30 calendar days to implement control measures or obtain regulatory relief;
  - c. This Order establishes a time schedule for bringing the Facility into compliance with the effluent limitations for settleable solids and turbidity for the discharge of solids from the water treatment plant that is as short as possible.
  - d. This Order requires the Discharger to limit the discharge of solids from the water treatment plant to the ocean to levels commensurate with current performance, as expressed through compliance with existing effluent limitations for total suspended solids at Effluent Monitoring Location EFF-002 for the water treatment plant.
18. Accordingly, violations of effluent limitations for BOD<sub>5</sub> and TSS in section A.2 of WDR Order No. R1-2010-0033 when producing unbleached kraft pulp and violations of effluent limitations for settleable solids and turbidity applicable to the discharge from the water treatment plant are not subject to MMPs if the Discharger

is in compliance with this Cease and Desist Order, including the interim limitations and schedules set forth in this Order.

19. Interim effluent limitations in this Order for BOD<sub>5</sub> and TSS during the production of unbleached pulp are performance-based and were developed using effluent monitoring data from the Facility from 2005 through 2007, a period of time during which the Facility produced only unbleached pulp. The procedure for calculating the daily maximum and monthly average limitation is described in section 5.1.4 of the U.S. EPA NPDES Permit Writers' Manual (EPA-833-B-96-003). The one-sided, upper 95 percent confidence bound for the 95th and 99th percentiles of the effluent distribution for BOD<sub>5</sub> and TSS used in the calculation were obtained from the statistical program RPNcalc Version 2.0.
20. The issuance of a cease and desist order subsequent to the issuance of waste discharge requirements is exempt from the California Environmental Quality Act (CEQA). (*Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside* (1977) 140 Cal.Rptr. 812, 73 Cal.App.3d 546, 555-556 (holding that the statutory exemption from CEQA for the promulgation of waste discharge requirements contained in Water Code 13389 applies to the issuance of a subsequent cease and desist order to enforce the original waste discharge requirements). In addition, the issuance of the CDO is exempt from the requirements of CEQA pursuant to section 15321 of title 14 of the California Code of Regulations. That section exempts the adoption of an administrative decision or order, such as a cease and desist order, enforcing or revoking a permit or enforcing an objective. Similarly, section 15307 exempts from the requirements of CEQA actions taken by a regulatory agency to assure the "maintenance, restoration, or enhancement of a natural resources where the regulatory process involves procedures for protection of the environment," which a cease and desist order is meant to do. (See also *Pacific Water Conditioning*, 73 Cal.App.3d at 557.)
21. On July 15, 2010, after due notice to the Discharger and all other affected persons, the Regional Water Board conducted a public hearing and evidence was received regarding this Cease and Desist Order.
22. Petition of Regional Board Action - Any person affected adversely by a decision of the Regional Water Board may petition the State Water Board to review the decision. The State Water Board must receive the petition within 30 days of the Regional Water Board's meeting at which the action was taken. Copies of the laws and regulations applicable to filing a petition will be provided upon request, and may also be accessed at:  
[www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality).

THEREFORE, IT IS HEREBY ORDERED, pursuant to Water Code Section 13301, that the Discharger shall cease discharging waste in violation of Waste Discharge Requirements Order No. R1-2010-0033 forthwith in accordance with the following time schedules:

1. Schedule to Cease Discharging Effluent with Levels of BOD<sub>5</sub> and TSS Greater Than Effluent Limitations Required by Effluent Limitation A.2 of Waste Discharge Requirements, Order No. R1-2010-0033.

Task	Compliance Date
A. Submit a revised best management practices plan (BMPP) to identify measures that the Discharger will take to minimize discharges of BOD <sub>5</sub> and TSS until the wastewater treatment plant is completed. The revised BMPP shall include a schedule for implementation of BMPs and a procedure for assessing the effectiveness of BMPs and implementing additional BMPs based on the assessment.	<del>November 19, 2010</del> <u>February 19, 2011</u>
B. Provide financial assurances for funding design and construction of the wastewater treatment plant at the Facility in a form acceptable to the Regional Water Board Executive Officer.	<del>September 17, 2010</del> <u>December 16, 2010</u>
C. Submit preliminary project proposal, including a description of the treatment technology selection process and details of the selected final project. Details of the selected project should include, at a minimum: final location of the treatment plant, design criteria, descriptions of unit processes, and process flow diagrams, and preliminary design drawings.	<del>September 17, 2010</del> <u>December 16, 2010</u>
D. Submit complete application to the County of Humboldt to secure required development permits for the wastewater treatment plant.	<del>October 12, 2010</del> <u>January 10, 2011</u>
E. Submit complete application to the North Coast Unified Air Quality Management District for an Authority to Construct Permit for the wastewater treatment plant.	<u>January 10, 2011</u> <del>October 12, 2010</del>
F. Award engineering and design contract for the wastewater treatment plant.	<del>December 16, 2010</del> <u>March 16, 2011</u>
G. Complete 60% level specifications and design drawings.	<del>June 13, 2011</del> <u>September 12, 2011</u>
H. Submit final specifications and design drawings to the Regional Water Board Executive Officer.	<del>November 9, 2011</del> <u>February 7, 2012</u>
I. Issue bid packages for construction contract.	<del>January 7, 2012</del> <u>April 6, 2012</u>
J. Award construction contract for the wastewater treatment plant.	<del>March 8, 2012</del> <u>June 6, 2012</u>

	<u>2012</u>
K. Commence construction of the wastewater treatment plant.	<u>April 6, 2012</u> <u>July 5, 2012</u>
L. Complete construction of the wastewater treatment plant.	<u>October 29, 2013</u> <u>July 31, 2013</u>
M. Full operation of the wastewater treatment plant in compliance with applicable NPDES permit effluent limits following start-up and initial performance tests.	<u>October 25, 2013</u> <u>January 23, 2014</u>
N. Submit final as-built drawings and results of performance tests to the Regional Water Board.	<u>November 29, 2013</u> <u>February 27, 2014</u>

2. Schedule to Cease Discharging Effluent with Levels of Settleable Solids and Turbidity Greater Than Effluent Limitations Required by Effluent Limitation A.3 of Waste Discharge Requirements, Order No. R1-2010-0033.

Task	Compliance Date
A. Review monitoring data and conduct initial technology evaluation for dewatering of water treatment plant solids.	<u>November 1, 2010</u> <u>January 31, 2011</u>
B. Characterize the settling properties of the water treatment plant solids for final evaluation of dewatering technologies.	<u>December 15, 2011</u> <u>March 14, 2012</u>
C. Conduct onsite pilot testing.	<u>March 14, 2012</u> <u>June 12, 2012</u>
D. Submit workplan of implementing compliance solution.	<u>May 11, 2012</u> <u>August 9, 2012</u>
E. Submit complete applications for permits necessary to implement compliance solution.	<u>August 10, 2012</u> <u>November 8, 2012</u>
F. Complete and submit engineering design specifications for compliance solution.	<u>December 7, 2012</u> <u>March 7, 2013</u>
G. Award contract for the installation or construction of the compliance solution.	<u>February 7, 2013</u> <u>May 8, 2013</u>
H. Complete construction of the compliance solution.	<u>June 7, 2013</u> <u>September 5, 2013</u>
I. Achieve full operation of the compliance solution and compliance with applicable NPDES permit effluent limits following start-up and initial performance tests.	<u>July 12, 2013</u> <u>October 10, 2013</u>

### 3. Quarterly Progress Reports

The Discharger shall submit quarterly written progress reports on compliance efforts to the Executive Officer. Regional Water Board staff may periodically present an informational update to the Regional Water Board based on the progress reports. The Discharger is required to continue operating pollution control systems and maintaining and implementing its BMPP to the best of its ability until the wastewater treatment plant is completed. The Discharger shall include in its quarterly progress reports a discussion of the operations, including current interim control measures in use and additional control measures implemented in accordance with the BMPP to minimize the discharge of BOD<sub>5</sub> and TSS. The progress reports shall describe what steps have been implemented towards achieving compliance with WDR Order No. R1-2010-0033 and this Order, including construction progress, evaluation of the effectiveness of the implemented measures and assessment of whether additional measures are necessary to meet the time schedule set forth above.

### 4. Interim limits for BOD<sub>5</sub> and TSS in effect until ~~October 25, 2013~~ January 23, 2014:

Section 13385(j)((3)(C) requires that if the time schedule exceeds one year from the effective date of the Order, the Regional Water Board must not only include interim requirements and dates for their achievement, but also interim effluent limitations for the pollutants of concern. From adoption of this Order until ~~October 25, 2013~~ January 23, 2014, while manufacturing unbleached pulp, the Discharger shall maintain compliance with the following interim effluent limitations for BOD<sub>5</sub> and TSS at Discharge Point 001 with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program.

Parameter	Units	Effluent Limitations - Unbleached Pulp					
		Average Monthly <sup>2</sup>	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Six-Month Median
TSS	lbs/day <sup>2</sup>	17,025	---	30,488	---	---	---
BOD <sub>5</sub>	lbs/day <sup>2</sup>	16,074	---	19,788	---	---	---

### 5. The Discharger shall not incur MMPs for violations of effluent limitations for BOD<sub>5</sub> and TSS in WDR Order No. R1-2010-0033 during the production of unbleached pulp so long as the discharge complies with the above interim limitations for BOD<sub>5</sub> and TSS.

### 6. Interim Limitations for TSS in effect until ~~July 12~~ October 10, 2013:

<sup>2</sup> The monthly discharge (lbs/day) of BOD<sub>5</sub> and TSS during production of unbleached pulp is obtained from the following calculation on any calendar month:

$$\text{Monthly Discharge (lbs/day)} = \frac{8.34}{N} \sum_{i=1}^N Q_i C_i$$

in which N is the number of days of production of unbleached pulp in any calendar month. Q<sub>i</sub> and C<sub>i</sub> are the flow rate (mgd) and the constituent concentration, respectively, which are associated with each of the N days in any calendar month.

Section 13385(j)((3)(C) requires that if the time schedule exceeds one year from the effective date of the Order, the Regional Water Board must not only include interim requirements and dates for their achievement, but also interim effluent limitations for the pollutants of concern. From adoption of this Order until ~~July 12~~October 10, 2013, the Discharger shall maintain compliance with effluent limitations for suspended solids at EFF-002, which will limit the discharge of total solids from the water treatment plant to current levels.

Total Suspended Solids	Pounds per day	
	Daily Maximum	Monthly Average
Wet Season (Oct. – Apr.)	400,000	70,000
Dry Season (May – Sept.)	400,000	14,000

7. The Discharger shall not incur MMPs for violations of effluent limitations for settleable solids and turbidity in WDR Order No. R1-2010-0033 for the discharge of solids from the water treatment plant so long as the discharge complies with the above interim limitations for total suspended solids, as measured at Monitoring Location EFF-002. Because total suspended solids serves as a surrogate for settleable solids and turbidity for the purpose of this CDO, any violation of an interim effluent limitation for total suspended solids shall be deemed a violation for settleable solids and a violation for turbidity and will be subject to MMPs in accordance with section 13385 (h) and (i) of the Water Code.
8. If, given written justification from the Discharger, the Executive Officer determines that a delay in any activity in any compliance schedule in the Order is beyond the reasonable control of the Discharger and is not caused by inaction or lack of proper planning on the part of the Discharger, the Executive Officer may revise the compliance schedule as appropriate. Written justification must be received by the Executive Officer before the specific due date occurs, must describe circumstances causing the delay, and must state when each of the remaining tasks of the compliance schedule will be completed.
- 8-9. Discharger shall not commence discharge prior to October 13, 2010, except upon written notice to the Executive Officer, who may in such event revise the compliance schedule to advance the deadlines set forth therein by the number of days before October 13, 2010 on which such discharge commences.

IT IS FURTHER ORDERED that if, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer is authorized to request that the Attorney General take appropriate judicial enforcement, issue a complaint for Administrative Civil Liability, bring an order before this Regional Water Board to revoke WDR Order No. R1-2010-0033, or take other appropriate enforcement actions as authorized by the California Water Code.

#### **Certification**

I, Catherine Kuhlman, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Cease and Desist Order adopted by the California Regional Water Quality Control Board, North Coast Region, on July 15, 2010.

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Catherine Kuhlman  
Executive Officer



Linda S. Adams  
Secretary for  
Environmental Protection

# State Water Resources Control Board



Arnold Schwarzenegger  
Governor

Office of Enforcement  
1001 I Street, 16th Floor, Sacramento, California 95814  
P.O. Box 100, Sacramento, California 95812-0100  
(916) 341-5272 ♦ FAX (916) 341-5896 ♦ <http://www.waterboards.ca.gov>

July 9, 2010

California North Coast Regional Water  
Quality Control Board  
Attn: Charles Reed  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403

Dear Board Members:

**Proposed Cease and Desist Order No. R1-2010-0039 Concerning Freshwater  
Tissue Company, Samoa Pulp Mill, NPDES Permit No. CA0005894**

The Office of Enforcement (OE) has reviewed the proposed Cease and Desist Order referenced above (Order) and has the following comments and suggestions. These comments are only from OE and do not reflect the views of the State Water Board members, the Executive Director, or any other office or division of the State Water Board. We encourage the North Coast Regional Water Quality Control Board (Regional Water Board) to consider, and hopefully resolve some of the following issues prior to proceeding with the adoption of the proposed Order.

OE has not been involved in the development of the Order, is not familiar with the entire record that supports the adoption of the proposed order, and has had a limited time to review and comment on the Order. The intent of this letter is merely to point out from OE's prospective some potential issues with enforcement of the Order. Nothing in this letter is intended to be legal advice to the Regional Water Board or an indication of how OE would recommend that the Regional Water Board or its staff proceed in enforcing the Order in the future.

***History of Non-Compliance Demonstrates Need for Financial Assurances***

As you are no doubt aware, the Samoa Pulp Mill (Mill) has a long history of violations stemming from the facilities inability to meet applicable effluent limitations due to its lack of secondary treatment. Since being formed in July of 2006, OE has been involved in two administrative civil liability actions against the prior owners of the Samoa Pulp Mill, Evergreen Pulp Inc. (Evergreen). Those efforts resulted in the Regional Water Board imposing over \$900,000 in liability against Evergreen.

After entering into a settlement agreement for a large portion of that liability, Evergreen Pulp sold the Mill to Freshwater Tissue Company (Freshwater) and defaulted on the liability payments to the Regional Water Board. To date, the Regional Water Board has not been able to collect any portion of the liability imposed against Evergreen. In addition, prior owners of the Mill also became insolvent when faced with bringing the facility into compliance.

The extensive history of violations and enforcement at the Mill underscore the fact that compliance at this facility is not going to be achieved through enforcement alone. It is not clear from the Order that Freshwater has provided the Regional Water Board with adequate assurances that it will be able to finance the costs of the necessary improvements and still have a viable business. In addition, we are concerned that the pulp market is volatile and there is no guarantee that a compliance plan that is feasible with today's pulp prices will still be possible in a year or two.

***The Order's Financial Assurance Requirement Needs Further Development***

Section 1, Task B. of the Order's compliance schedule for biochemical oxygen demand (BOD) and total suspended solids (TSS) requires Freshwater to "[p]rovide financial assurances for funding design and construction of the wastewater treatment plant at the Facility in a form acceptable to the Regional Water Board Executive Officer." OE's experience with similarly worded provisions teaches that not all financial assurance mechanisms provide an acceptable level of security and enforceability. This provision should be elaborated upon to specify, at the time the Order is adopted, the type of assurance instrument/s that are acceptable to the Regional Water Board as well the amount of money that the instrument is securing, expressed either as a specific number or a percentage of the estimated cost of the wastewater treatment plant. A similar financial assurance mechanism should also be required for the capital improvements necessary to comply with settleable solids and turbidity requirements discussed in Section 2, Tasks A through I of the Order.

***The Order Should Demonstrate that the Compliance Schedule is Supported by the Record***

It is unclear from the Order why the compliance dates for the tasks identified in the schedules in section 1 and 2 of the Order (pp. 8 and 9) are reasonable and attainable. Again, OE is not familiar with the entire record supporting adoption of the Order. Regardless, it is probable that at some point Freshwater may violate some of the compliance dates or seek an amendment to those dates and it would be helpful to have an explanation as to why these dates are reasonable and attainable at the time the Order is adopted.

Also, it is possible that Freshwater's ability to meet the deadlines in the compliance schedule could be impacted by outside factors, such as inaction by third parties. The Order should address under what circumstances the Regional Water Board will consider changing these dates and the process by which Freshwater could request such changes. For example, the Regional Water Board could require that Freshwater request extension in writing at least 10 days prior to the compliance date at issue.

***Failure to Comply with Order Will Subject Freshwater to Mandatory Minimum Penalties***

The Order acknowledges that violations of effluent limitations for which the Order provides interim limits are not subject to Mandatory Minimum Penalties (MMPs), so long as Freshwater "is in compliance with this Cease and Desist Order, including the interim limitation and schedules set forth in this Order." (Order, pp. 7 and 11.) At a minimum violation of the interim effluent limits would subject Freshwater to MMPs for those specific constituents exceed the interim effluent limits. In addition, failure to meet the compliance dates in the Order would also expose Freshwater to MMPs. Violation of the Order's compliance dates could result in MMPs for all or some of the constituents for which Freshwater is out of compliance with final effluent limits. The Regional Water Board may wish to further clarify the situations in which MMPs will apply to violations of the Cease and Desist Order.

***The Interim Limits for Suspended Solids and Turbidity Need Further Clarification***

The Order asserts that MMPs for violation of the final effluent limitations for settleable solids and turbidity will not apply because Freshwater meets the requirements of Water Code section 13385(j)(3). Since the Order will last longer than 1 year, for Freshwater to qualify for the exemption under section 13385(j)(3), the Order must establish interim effluent limitations for settleable solids and turbidity. (Water Code section 13385(j)(3)(C)(i).)

The Order currently proposes using effluent limits for total suspended solids (TSS), as stated in the 2004 NPDES Permit No. R1-2004-00XX and the Tentative 2010 NPDES Permit, No. R1-2010-XXXX, as the interim effluent limits for settleable solids and turbidity in the Order. It is unclear from the Order why TSS, as it is expressed as an effluent limit for the water treatment plant by wet/dry season in pounds per day, is an acceptable indicator of settleable solids and turbidity, which are the pollutants of concern. Furthermore, if TSS is going to be used as an indicator of when settleable solids and turbidity levels are in violation of the interim effluent limits, then we recommend adding additional language to clarify that when TSS is in excess of the interim effluent limits Freshwater will be subject to MMPs for both settleable solids and turbidity.

North Coast Water Board  
Attn: Charles Reed

- 4 -

***There is Potential for Broad Range of Future Enforcement***

The final sentence of the order should be revised to be substantially similar to the following:

IT IS FURTHER ORDERED that if, in the opinion of the Executive Officer the Discharger fails to comply with the provisions of this Order, the Executive Officer ~~may apply~~ is authorized to request that the Attorney General ~~for take appropriate~~ judicial enforcement, or issue a complaint for Administrative Civil liability, or bring an order back before this Regional Water Board an order to revoke WDR Order No R1-2010-0033, or take other appropriate enforcement actions as authorized by the California Water Code.

Lastly, this Order will require continued diligence and involvement from the Regional Water Board and dedication of a significant amount of staff time and resources to monitor Freshwater's compliance with the Order. The potential impact that this dedication of limited resources will have on other Regional Water Board priorities should be considered.

If the Regional Water Board staff has any questions regarding these comments, please contact me or Yvonne West, Staff Counsel, at (916)341-5445.

Sincerely,



Reed Sato, Director  
**Office of Enforcement**

cc: Dorothy Rice, Executive Director  
SWRCB

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
NORTH COAST REGION

ADMINISTRATIVE CIVIL LIABILITY ORDER NO. R1-2009-0032

For

VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS

Order No. R1-2004-0047  
NPDES No. CA0005894

In the Matter of

EVERGREEN PULP, INC.,  
SAMOA PULP MILL  
WDID No. 1B77005OHUM

Humboldt County

The California Regional Water Quality Control Board North Coast Region (Regional Water Board), having considered in a public meeting on April 23, 2009, all comments received on the issuance of liability against Evergreen Pulp Inc. (Evergreen) regarding violations alleged in Complaint No. R1-2009-0012, dated January 27, 2009 (Complaint) (Exhibit A, attached), having provided public notice thereof and not less than (30) days for public comment, and on the recommendation for administrative assessment of Civil Liability in the amount of \$453,000 finds as follows:

1. Evergreen owned and operated the Samoa Pulp Mill until February 6, 2009. The Pulp Mill was regulated by Waste Discharge Requirements Order No. R1-2004-0047, NPDES Permit No. CA0005894. The pulp mill is located at 1 TCF Drive on the north spit of Humboldt Bay near the community of Samoa.
2. The Samoa Pulp Mill has the capacity to produce an average of 700 tons per day of bleached or unbleached Kraft market pulp. The mill was permitted to discharge a monthly average of up to 20 million gallons per day of wastewater through a submerged multi-port diffuser, with a dilution ratio of 115:1, located 8,200 feet offshore in the Pacific Ocean at a depth of 82 feet. The mill did not have wastewater treatment facilities and relied on process control and best management practices to meet the terms of the waste discharge requirements. Effluent from the mill consisted of process wastewater from the Kraft pulping process, wastewater from maintenance activities, solids from the raw water treatment plant, blowdown from the recovery boiler, storm water, and freshwater flows to maintain the outfall during periods of pulp mill shutdown.
3. On January 27, 2009, the Assistant Executive Officer of the Regional Water Board issued the Complaint which proposed to assess an administrative civil liability of \$453,000 against Evergreen for violations of effluent limitations contained in Regional Water Board Waste Discharge Requirements Order No. R1-2004-0047. The violations detailed in Table 1 of the Complaint occurred during the period of January 1, 2008 through December 31, 2008, and are subject to mandatory minimum penalties and civil liability provisions outlined in California Water Code section 13385, subsection (c), (e), (h) and (i).

4. During a comment period beginning on January 27, 2009 and ending on March 4, 2009, Evergreen was provided notice and given an opportunity to submit comments, testimony and other evidentiary material or to settle the matter by paying the penalty and waiving a hearing on the matter. No response was received from Evergreen during the comment period described above.
5. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000 *et seq.*) (CEQA) in accordance with section 15321, Chapter 3, Title 14, California Code of Regulations. This action is also exempt from the provisions of CEQA in accordance with section 15061(b)(3) of Chapter 3, Title 14 of the California Code of Regulations because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

IT IS HEREBY ORDERED that:

1. Evergreen shall be assessed the civil liability of \$453,000.
2. Evergreen shall remit, within 30 days of the date of this order, payment of the full penalty of \$453,000 to the State Water Pollution Cleanup and Abatement Account c/o the Regional Water Quality Control Board, North Coast Region, 5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403.
3. Fulfillment of Evergreen's obligations under this Order constitutes full and final satisfaction of any and all liability for each of the alleged violations specifically identified in this Order.
4. The Executive Officer, or her delegate, is authorized to refer this matter to the Office of the Attorney General for enforcement if Evergreen fails to comply with Paragraph 2.

Certification

I, Catherine Kuhlman, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region on April 23, 2009.

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Catherine Kuhlman  
Executive Officer

California Regional Water Quality Control Board  
North Coast Region

Administrative Civil Liability Complaint No. R1-2009-0012

For  
Violation of Waste Discharge Requirements  
Order No. R1-2004-0047  
NPDES No. CA0005894

In the Matter of

Evergreen Pulp, Inc.  
Samoa Pulp Mill  
WDID No. 1B77005OHUM

Humboldt County

This Complaint, to assess administrative civil liability for penalties pursuant to Water Code section 13385, is issued to Evergreen Pulp Inc. (hereinafter Discharger) for violations of Waste Discharge Requirements Order No. R1-2004-0047, NPDES Permit No. CA0005894, (hereinafter referred to as WDRs) that occurred during the period January 1, 2008 through December 31, 2008.

The Assistant Executive Officer of the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) finds the following:

1. The Discharger owns and operates the Samoa Pulp Mill, which is regulated by Waste Discharge Requirements Order No. R1-2004-0047, NPDES Permit No. CA0005894. The pulp mill is located at 1 TCF Drive on the north spit of Humboldt Bay near the community of Samoa.
2. The Samoa Pulp Mill has the capacity to produce an average of 700 tons per day of bleached or unbleached Kraft market pulp. The mill is permitted to discharge a monthly average of up to 20 million gallons per day of wastewater through a submerged multi-port diffuser, with a dilution ratio of 115:1, located 8,200 feet offshore in the Pacific Ocean at a depth of 82 feet. The mill does not have wastewater treatment facilities and relies on process control and best management practices to meet the terms of the waste discharge requirements. Effluent from the mill consists of process wastewater from the Kraft pulping process, wastewater from maintenance activities, solids from the raw water treatment plant, blowdown from the recovery boiler, storm water, and freshwater flows to maintain the outfall during periods of pulp mill shutdown.
3. The Regional Water Board adopted WDRs Order No. R1-2004-0047 for Stockton Pacific Enterprises, Inc. on June 22, 2004. The Order was subsequently transferred to the Discharger on March 18, 2005. These WDRs serve as a National Pollutant Discharge Elimination System (NPDES) Permit (No. CA0005894) under the Federal Clean Water Act.

4. On August 1, 2008, the Regional Water Board issued Administrative Civil Liability Complaint No. R1-2008-0097 to assess penalties for violations that occurred from March 1, 2005 to December 31, 2007. The penalty amount of \$463,000 included mandatory minimum penalties and discretionary penalties.
5. This Complaint covers violations of effluent limitations that occurred from January 1, 2008, through December 31, 2008. The details of these violations are presented in Findings 12 and 13 of this Complaint. These violations are subject to the mandatory minimum penalties and civil liability provisions contained in California Water Code section 13385, subsections (h) and (i). There were no additional violations of discharge prohibitions or receiving water limits subject to discretionary penalties pursuant to Water Code Section 13350(e) and 13385(c).
6. This Complaint demonstrates a significant increase in MMP violations, which appears to be due to Evergreen's decision to change from the production of brownstock (non-bleached) pulp to Totally Chlorine Free (bleached) pulp production, which occurred, according to self-monitoring reports, on January 15, 2008.
7. Among the provisions in the WDRs are requirements to implement a discharge monitoring program and to prepare and submit monthly and annual NPDES self-monitoring reports to the Regional Water Board pursuant to Water Code section 13383. These reports are designed to determine compliance with effluent limitations contained in the WDRs.
8. Water Code section 13385, subdivision (h)(1) establishes a mandatory minimum penalty of three thousand dollars (\$3,000) for each serious violation of an NPDES permit effluent limitation. Water Code section 13385, subdivision (h)(2) states that one type of serious violation occurs if the discharge from a facility regulated by an NPDES permit exceeds the effluent limitations for a Group I pollutant, as specified in Appendix A to Section 123.45 of title 40 of the Code of Federal Regulations, by 40 percent or more, or for a Group II pollutant, as specified in Appendix A to Section 123.45 of title 40 of the Code of Federal Regulations, by 20 percent or more.
9. Water Code section 13385, subdivision (i)(1) requires the Regional Water Board to assess a mandatory minimum penalty of three thousand dollars (\$3,000) for each violation, not counting the first three violations, if the discharger does any of the following for four or more times in any period of six consecutive months:
  - (a) Violates a waste discharge requirement effluent limit.
  - (b) Fails to file a report pursuant to section 13260.

- (c) Files an incomplete report pursuant to section 13260.
- (d) Violates a toxicity effluent limitation contained in the applicable waste discharge requirements where the waste discharges do not contain pollutant-specific effluent limitations for toxic pollutants.

Violations under section 13385, subdivision (i)(1) are referred to as "chronic" violations in this Complaint.

10. On February 19, 2002, the State Water Resources Control Board (State Water Board) adopted Resolution No. 2002-0040 amending the Water Quality Enforcement Policy (Enforcement Policy). The Enforcement Policy was approved by the Office of Administrative Law and became effective on July 30, 2002. The Enforcement Policy addresses, among other enforcement matters, issues related to assessing mandatory minimum penalties.
11. For the purpose of determining a Discharger's compliance with effluent limitations in its WDR Order/NPDES permit, the 30-day average is equivalent to the monthly average, which is defined as the arithmetic mean of all daily determinations made during a calendar month. Where less than daily sampling is required, the average shall be determined by the sum of all the measured daily discharges divided by the number of days during the calendar month when the measurements were made. If only one sample is collected during that period of time, the value of the single sample shall constitute the monthly average.
12. Order No. R1-2004-0047 includes the following effluent limitations:

## B. EFFLUENT LIMITATIONS

1. The permittee is authorized to discharge process wastewater, maintenance-related wastewater, solids from the raw water treatment plant, blowdown from the recovery boiler, and storm water from the pulpmill site and the adjacent sawmill from outfall Serial Number (SN) 001 to the Pacific Ocean. The discharge to outfall SN 001 in excess of the following limits is prohibited:

<u>Parameter</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD <sub>5</sub> @ 20°C	lb/day <sup>1</sup>	11,270	21,630
pH	Standard Units	Within the limits of 5.0 to 9.0 <sup>2</sup>	

<sup>1</sup> Based on 40 CFR 430.22 and a production rate of 700 ADT/day

<sup>2</sup> Compliance shall be determined under 40 CFR 401.17 and 430.22

13. According to monitoring reports submitted by the Discharger for the period from January 1, 2008, through December 31, 2008, the Discharger exceeded effluent limitations 154 times. Twenty-six of the exceedances are serious violations in accordance with Water Code section 13385, subdivision (h). One hundred twenty-eight of the exceedances are chronic violations in accordance with Water Code section 13385, subdivision (i)(1). The mandatory minimum penalty amount for these violations under 13385, subdivisions (h) and (i), is \$453,000 as shown in the following table:

**Table 1**  
**Effluent Limitation Exceedances Subject to Mandatory Penalties**  
**January 1, 2008 through December 31, 2008**

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
01/18/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,868 lbs/day	Chronic	1 <sup>st</sup> chronic
01/19/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,561 lbs/day	Chronic	2 <sup>nd</sup> chronic
01/21/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,579 lbs/day	Chronic	3 <sup>rd</sup> chronic
01/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,589 lbs/day	Chronic	\$3,000
01/23/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,772 lbs/day	Chronic	\$3,000
01/24/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,914 lbs/day	Chronic	\$3,000
01/25/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,707 lbs/day	Chronic	\$3,000
01/26/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,500 lbs/day	Chronic	\$3,000
01/29/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,992 lbs/day	Chronic	\$3,000
01/31/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,708 lbs/day	Chronic	\$3,000
01/31/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	14,164 lbs/day	Chronic	\$3,000
02/01/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,874 lbs/day	Chronic	\$3,000
02/04/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,492 lbs/day	Chronic	\$3,000
02/05/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,023 lbs/day	Chronic	\$3,000
02/07/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,995 lbs/day	Chronic	\$3,000
02/08/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	28,690 lbs/day	Chronic	\$3,000
02/09/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,333 lbs/day	Chronic	\$3,000

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
02/10/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	32,352 lbs/day	Chronic	\$3,000
02/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,059 lbs/day	Chronic	\$3,000
02/13/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,679	Chronic	\$3,000
02/29/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	16,739 lbs/day	Serious	\$3,000
03/04/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	155,339 lbs/day	Chronic	\$3,000
03/05/08	Exceeded pH Maximum Individual Excursion Limit of 60 minutes	60.6 minutes	Chronic	\$3,000
03/05/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	37,686 lbs/day	Chronic	\$3,000
03/06/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,832 lbs/day	Chronic	\$3,000
03/07/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,866 lbs/day	Chronic	\$3,000
03/08/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	33,175 lbs/day	Serious	\$3,000
03/09/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,533 lbs/day	Chronic	\$3,000
03/10/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,271 lbs/day	Chronic	\$3,000
03/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,195 lbs/day	Chronic	\$3,000
03/12/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	35,815 lbs/day	Serious	\$3,000
03/13/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,497 lbs/day	Chronic	\$3,000
3/14/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,093 lbs/day	Chronic	\$3,000
03/15/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,061 lbs/day	Chronic	\$3,000
03/16/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,421 lbs/day	Chronic	\$3,000
03/28/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,381 lbs/day	Chronic	\$3,000
03/30/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,664 lbs/day	Chronic	\$3,000
03/31/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,781 lbs/day	Chronic	\$3,000
03/31/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	24,530 lbs/day	Serious	\$3,000
04/01/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,870 lbs/day	Chronic	\$3,000
04/02/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,818 lbs/day	Chronic	\$3,000
04/03/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	31,717 lbs/day	Serious	\$3,000

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
04/04/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	28,653 lbs/day	Chronic	\$3,000
04/05/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,903 lbs/day	Chronic	\$3,000
04/06/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,074 lbs/day	Chronic	\$3,000
04/09/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,828 lbs/day	Chronic	\$3,000
04/10/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,261 lbs/day	Chronic	\$3,000
04/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	28,770 lbs/day	Chronic	\$3,000
04/12/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	32,305 lbs/day	Serious	\$3,000
04/13/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,869 lbs/day	Chronic	\$3,000
04/14/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,826 lbs/day	Chronic	\$3,000
04/15/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,812 lbs/day	Chronic	\$3,000
04/18/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,123 lbs/day	Chronic	\$3,000
04/19/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	30,542 lbs/day	Serious	\$3,000
04/20/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,535 lbs/day	Chronic	\$3,000
04/21/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	28,008 lbs/day	Chronic	\$3,000
04/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,084 lbs/day	Chronic	\$3,000
04/23/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,640 lbs/day	Chronic	\$3,000
04/24/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,026 lbs/day	Chronic	\$3,000
04/25/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,784 lbs/day	Chronic	\$3,000
04/26/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,909 lbs/day	Chronic	\$3,000
04/27/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,683 lbs/day	Chronic	\$3,000
04/30/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	25,466 lbs/day	Serious	\$3,000
05/02/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,821 lbs/day	Chronic	\$3,000
05/03/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	33,298 lbs/day	Serious	\$3,000
05/04/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	30,373 lbs/day	Serious	\$3,000
05/05/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	31,431 lbs/day	Serious	\$3,000

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
05/06/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,420 lbs/day	Chronic	\$3,000
05/07/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	31,164 lbs/day	Serious	\$3,000
05/08/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,156 lbs/day	Chronic	\$3,000
05/09/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,107 lbs/day	Chronic	\$3,000
05/10/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,912 lbs/day	Chronic	\$3,000
05/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	30,604 lbs/day	Serious	\$3,000
05/12/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	35,125 lbs/day	Serious	\$3,000
05/13/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,645 lbs/day	Chronic	\$3,000
05/14/09	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	33,447 lbs/day	Serious	\$3,000
05/15/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,882 lbs/day	Chronic	\$3,000
05/18/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,993 lbs/day	Chronic	\$3,000
05/19/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	32,757 lbs/day	Serious	\$3,000
05/20/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,928 lbs/day	Chronic	\$3,000
05/21/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,271 lbs/day	Chronic	\$3,000
05/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	32,187 lbs/day	Serious	\$3,000
05/23/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,973 lbs/day	Chronic	\$3,000
05/24/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,396 lbs/day	Chronic	\$3,000
05/26/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,612 lbs/day	Chronic	\$3,000
05/27/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,593 lbs/day	Chronic	\$3,000
05/31/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	23,479 lbs/day	Serious	\$3,000
06/21/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	30,294 lbs/day	Serious	\$3,000
06/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,889 lbs/day	Chronic	\$3,000
06/23/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,887 lbs/day	Chronic	\$3,000
06/28/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,997 lbs/day	Chronic	\$3,000
06/29/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	40,819 lbs/day	Serious	\$3,000

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
06/29/08	Exceeded Maximum Individual Excursion Limit of 60 Minutes	65.6 minutes	Chronic	\$3,000
06/30/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	28,049 lbs/day	Chronic	\$3,000
07/01/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,436 lbs/day	Chronic	\$3,000
07/02/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,995 lbs/day	Chronic	\$3,000
07/03/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,659 lbs/day	Chronic	\$3,000
07/06/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,858 lbs/day	Chronic	\$3,000
07/07/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,788 lbs/day	Chronic	\$3,000
07/08/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,801 lbs/day	Chronic	\$3,000
07/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,344 lbs/day	Chronic	\$3,000
07/19/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	31,021 lbs/day	Chronic	\$3,000
07/21/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,826 lbs/day	Chronic	\$3,000
07/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,328 lbs/day	Chronic	\$3,000
07/23/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	30,611 lbs/day	Serious	\$3,000
07/24/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,648 lbs/day	Chronic	\$3,000
07/25/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,708 lbs/day	Chronic	\$3,000
07/27/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,379 lbs/day	Chronic	\$3,000
07/28/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,896 lbs/day	Chronic	\$3,000
07/29/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	29,246 lbs/day	Chronic	\$3,000
07/30/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,962 lbs/day	Chronic	\$3,000
07/31/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,901 lbs/day	Chronic	\$3,000
07/31/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	19,647 lbs/day	Serious	\$3,000
08/01/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,961 lbs/day	Chronic	\$3,000
08/02/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,373 lbs/day	Chronic	\$3,000
08/07/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,137 lbs/day	Chronic	\$3,000
08/09/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,132 lbs/day	Chronic	\$3,000

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
08/10/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,813 lbs/day	Chronic	\$3,000
08/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,403 lbs/day	Chronic	\$3,000
08/13/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,710 lbs/day	Chronic	\$3,000
08/15/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,999 lbs/day	Chronic	\$3,000
08/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,679 lbs/day	Chronic	\$3,000
08/23/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,111 lbs/day	Chronic	\$3,000
08/24/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,224 lbs/day	Chronic	\$3,000
08/25/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,758 lbs/day	Chronic	\$3,000
08/26/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	24,100 lbs/day	Chronic	\$3,000
08/27/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	33,210 lbs/day	Serious	\$3,000
08/28/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,661 lbs/day	Chronic	\$3,000
08/29/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,763 lbs/day	Chronic	\$3,000
08/31/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	20,962 lbs/day	Serious	\$3,000
09/02/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,623 lbs/day	Chronic	\$3,000
09/04/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,712 lbs/day	Chronic	\$3,000
09/06/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,552 lbs/day	Chronic	\$3,000
09/08/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,168 lbs/day	Chronic	\$3,000
09/09/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,916 lbs/day	Chronic	\$3,000
09/10/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,920 lbs/day	Chronic	\$3,000
09/11/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,954 lbs/day	Chronic	\$3,000
09/13/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	27,391 lbs/day	Chronic	\$3,000
09/14/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	21,922 lbs/day	Chronic	\$3,000
09/16/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,476 lbs/day	Chronic	\$3,000
09/17/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	31,505 lbs/day	Serious	\$3,000
09/18/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,197 lbs/day	Chronic	\$3,000

Date	Violation	Reported Value	Violation Type	Mandatory Minimum Penalty
09/20/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,773 lbs/day	Chronic	\$3,000
09/22/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,449 lbs/day	Chronic	\$3,000
09/24/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,689 lbs/day	Chronic	\$3,000
09/25/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,751 lbs/day	Chronic	\$3,000
09/26/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,928 lbs/day	Chronic	\$3,000
09/27/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,645 lbs/day	Chronic	\$3,000
09/28/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,590 lbs/day	Chronic	\$3,000
09/29/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,915 lbs/day	Chronic	\$3,000
09/30/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,874 lbs/day	Chronic	\$3,000
09/30/08	Exceeded Monthly Average BOD limit of 11,270 lbs/day	23,059 lbs/day	Serious	\$3,000
10/01/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	25,587 lbs/day	Chronic	\$3,000
10/02/08	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,212 lbs/day	Chronic	\$3,000
			<b>TOTAL</b>	<b>\$453,000</b>

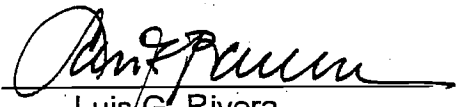
14. The issuance of this Complaint is an enforcement action to protect the environment, and is therefore exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.) pursuant to title 14, California Code of Regulations sections 15308 and 15321, subsection (a) (2).

**EVERGREEN PULP, INC. IS HEREBY GIVEN NOTICE THAT:**

1. The Assistant Executive Officer of the Regional Water Quality Control Board is issuing this Complaint for \$453,000 to the Discharger for violations of WDRs, subject to mandatory minimum penalties, that occurred from January 1, 2008 through December 31, 2008.
2. The Regional Water Board will conduct a hearing on this Complaint on March 12, 2009, unless the Discharger waives the right to a hearing by signing and returning the waiver form attached to this Complaint by March 4, 2009. By

doing so, Evergreen Pulp, Inc. agrees to pay the \$453,000 penalty in full to the State Water Pollution Cleanup and Abatement Account by March 4, 2009.

3. If the Discharger waives the hearing and agrees to pay the foregoing penalty amount as described above, the resulting settlement may become final, subject to payment of the penalty by Discharger, on March 5, 2009. If there are significant public comments, the Assistant Executive Officer may withdraw the Complaint, reissue it as appropriate, or take other appropriate action.
4. If a hearing is held, the Regional Water Board may impose an administrative civil liability in the amount proposed or for a different amount (but not less than the mandatory minimum penalty), or refer the matter to the Attorney General to have a Superior Court consider enforcement.
5. Regulations of the United States Environmental Protection Agency require public notification of any proposed settlement of the civil liability occasioned by violation of the Clean Water Act, including NPDES permit violations. The foregoing procedure for noticing the Complaint for public review and comment satisfies this federal requirement.

  
Luis G. Rivera  
Assistant Executive Officer

January 27, 2009



California Regional Water Quality Control Board  
North Coast Region

Waiver of Right to a Public Hearing  
For  
Administrative Civil Liability Complaint No. R1-2009-0012

In the Matter of

Evergreen Pulp Inc  
WDID NO. 1B77005OHUM

Humboldt County

By signing below, I hereby affirm and acknowledge the following:

1. I am the duly authorized representative of Evergreen Pulp, Inc. (Discharger) to represent its interests before the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) as they relate to the Discharger's Waste Discharge Requirements and NPDES Permit;
2. I am informed of the right provided by Water Code section 13323, subdivision (b), to a hearing within ninety (90) days of issuance of an Administrative Civil Liability Complaint;
3. On behalf of Discharger, I hereby waive Discharger's right to a hearing before the Regional Water Board on Administrative Civil Liability Complaint No. R1-2009-0012 (Complaint). Nothing in this waiver shall be construed to limit Discharger's right to appear and participate fully in any hearing that may be conducted on the foregoing Complaint or any other Administrative Civil Liability complaint against it.
4. On behalf of Discharger, I agree to remit the full penalty of \$453,000 to the State Water Pollution Cleanup and Abatement Account, c/o State Water Resources Control Board at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403, by March 4, 2009.
5. I understand that this settlement is subject to public comment.
6. I understand that the Assistant Executive Officer has complete discretion to terminate or propose modifications to this settlement in response to comments received during the public comment period.
7. Should the Regional Water Board or its staff modify or terminate the settlement, that action shall not give rise to a claim by the Discharger of unfairness or bias on the part of the Regional Water Board or its staff.

\_\_\_\_\_  
Name (Print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title/Organization



California Regional Water Quality Control Board  
North Coast Region

REVISED NOTICE OF PUBLIC HEARING AND NOTICE OF ISSUANCE OF A  
COMPLAINT

Administrative Civil Liability Complaint No. R1-2009-0012

For

Violation of Waste Discharge Requirements  
Order No. R1-2004-0047  
NPDES No. CA0005894

In the Matter of

Evergreen Pulp Inc.  
WDID No. 1B77005OHUM

Humboldt County

On January 27, 2009, the California Regional Water Quality Control Board, North Coast Region (Regional Water Board), Assistant Executive Officer issued Administrative Civil Liability Complaint R1-2009-0012 (Complaint) to the Evergreen Pulp Inc. (Discharger). The Complaint proposes civil penalties pursuant to Water Code section 13385 in the amount of \$453,000 for alleged violations of effluent limitations in Waste Discharge Requirements Order No. R1-2004-0047 (NPDES No. CA0005894) that occurred during the period January 1, 2008 through December 31, 2008.

The Discharger may satisfy terms of the Complaint by paying the full amount of the penalty into the State Water Pollution Cleanup and Abatement Account.

***Opportunity for Settlement Without a Public Hearing***

The matter was originally scheduled for the March 12, 2009 board meeting but has been rescheduled to April 23, 2009. A public comment period commenced on the January 27, 2009 and ends on March 4, 2009. This matter may be settled without a hearing if no significant comments are received during the comment period and if the Discharger waives the hearing and agrees to pay the full amount of the proposed civil liability. The Assistant Executive Officer will consider comments received, and will either finalize the settlement or take other appropriate action.

***Public Hearing Procedures***

If the Discharger expresses intent to contest the Complaint by not waiving the hearing, the Regional Water Board will hold a public hearing on this matter on April 23, 2009 at 9:00 a.m., or as announced in the Regional Water Board's summary agenda to be mailed on or about April 1, 2009. The hearing is scheduled to be held in the Fortuna River Lodge Conference Center, Chinook Room, 1800 Riverwalk Drive, Fortuna, California. At the hearing, the Regional Water Board will consider whether to affirm, reject, or modify the proposed civil liability, or take other enforcement action.

If the Discharger does not waive the right to a hearing, and the Discharger and/or interested persons would like the Regional Water Board to consider additional technical reports, testimony, and other evidentiary material concerning this issue before taking action, written copies of such documentation must be received at the Regional Water Board office at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403, by 5:00 p.m. on March 4, 2009. This written material will be made available to the Regional Water Board members, Regional Water Board staff, and all interested persons.

Written material received after the above date will not be accepted, except at the discretion of the Regional Water Board Chair. Untimely written material will not be accepted or incorporated into the administrative record if doing so would prejudice the Discharger or the Regional Water Board staff. The Chair may choose to modify this rule upon a showing of severe hardship (California Code of Regulations, title 23, sections 648.1 and 648.4).

All those who plan to testify at the hearing must submit written statements to the Regional Water Quality Control Board by March 4, 2009. The statements should provide the name of the witness, their qualifications (if an expert), and the scope of their intended testimony. Testimony at the above-scheduled hearing may summarize or explain timely submitted or late-accepted written evidence, but shall not add new evidence. The time constraints for oral testimony or comments will be set by the Regional Water Board Chair and usually will allow no more than ten minutes for Regional Water Board staff and the Discharger and three minutes for other interested persons. A timer may be used and speakers are expected to honor the time limits. Where speakers can be grouped by affiliation or interest, such groups will be expected to select a spokesperson and not be repetitive.

### ***Document Review***

The Complaint is available for review on the Regional Water Board web site at [http://www.waterboards.ca.gov/northcoast/board\\_decisions/tentative\\_orders/](http://www.waterboards.ca.gov/northcoast/board_decisions/tentative_orders/). That document as well as the other evidentiary documents and files, may be inspected or copied at the Regional Water Board office on Monday through Friday from 8:00 a.m. to 5:00 p.m. Appointments are recommended for file review. Appointments can be made by calling (707) 576-2220. For further information, please contact Regional Water Board staff member Bill Rodriguez at (707) 576-2683 or at [wrodriguez@waterboards.ca.gov](mailto:wrodriguez@waterboards.ca.gov).

Luis G. Rivera  
Assistant Executive Officer

February 27, 2009

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
NORTH COAST REGION

ADMINISTRATIVE CIVIL LIABILITY ORDER NO. R1-2009-0032

For

VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS

Order No. R1-2004-0047  
NPDES No. CA0005894

In the Matter of

EVERGREEN PULP, INC.,  
SAMOA PULP MILL  
WDID No. 1B77005OHUM

Humboldt County

The California Regional Water Quality Control Board North Coast Region (Regional Water Board), having considered in a public meeting on April 23, 2009, all comments received on the issuance of liability against Evergreen Pulp Inc. (Evergreen) regarding violations alleged in Complaint No. R1-2009-0012, dated January 27, 2009 (Complaint) (Exhibit A, attached), having provided public notice thereof and not less than (30) days for public comment, and on the recommendation for administrative assessment of Civil Liability in the amount of \$453,000 finds as follows:

1. Evergreen owned and operated the Samoa Pulp Mill until February 6, 2009. The Pulp Mill was regulated by Waste Discharge Requirements Order No. R1-2004-0047, NPDES Permit No. CA0005894. The pulp mill is located at 1 TCF Drive on the north spit of Humboldt Bay near the community of Samoa.
2. The Samoa Pulp Mill has the capacity to produce an average of 700 tons per day of bleached or unbleached Kraft market pulp. The mill was permitted to discharge a monthly average of up to 20 million gallons per day of wastewater through a submerged multi-port diffuser, with a dilution ratio of 115:1, located 8,200 feet offshore in the Pacific Ocean at a depth of 82 feet. The mill did not have wastewater treatment facilities and relied on process control and best management practices to meet the terms of the waste discharge requirements. Effluent from the mill consisted of process wastewater from the Kraft pulping process, wastewater from maintenance activities, solids from the raw water treatment plant, blowdown from the recovery boiler, storm water, and freshwater flows to maintain the outfall during periods of pulp mill shutdown.
3. On January 27, 2009, the Assistant Executive Officer of the Regional Water Board issued the Complaint which proposed to assess an administrative civil liability of \$453,000 against Evergreen for violations of effluent limitations contained in Regional Water Board Waste Discharge Requirements Order No. R1-2004-0047. The violations detailed in Table 1 of the Complaint occurred during the period of January 1, 2008 through December 31, 2008, and are subject to mandatory minimum penalties and civil liability provisions outlined in California Water Code section 13385, subsection (c), (e), (h) and (i).

4. During a comment period beginning on January 27, 2009 and ending on March 4, 2009, Evergreen was provided notice and given an opportunity to submit comments, testimony and other evidentiary material or to settle the matter by paying the penalty and waiving a hearing on the matter. No response was received from Evergreen during the comment period described above.
5. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000 *et seq.*) (CEQA) in accordance with section 15321, Chapter 3, Title 14, California Code of Regulations. This action is also exempt from the provisions of CEQA in accordance with section 15061(b)(3) of Chapter 3, Title 14 of the California Code of Regulations because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

IT IS HEREBY ORDERED that:

1. Evergreen shall be assessed the civil liability of \$453,000.
2. Evergreen shall remit, within 30 days of the date of this order, payment of the full penalty of \$453,000 to the State Water Pollution Cleanup and Abatement Account c/o the Regional Water Quality Control Board, North Coast Region, 5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403.
3. Fulfillment of Evergreen's obligations under this Order constitutes full and final satisfaction of any and all liability for each of the alleged violations specifically identified in this Order.
4. The Executive Officer, or her delegate, is authorized to refer this matter to the Office of the Attorney General for enforcement if Evergreen fails to comply with Paragraph 2.

Certification

I, Catherine Kuhlman, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region on April 23, 2009.

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Catherine Kuhlman  
Executive Officer

California Regional Water Quality Control Board  
North Coast Region

ORDER NO. R1-2009- 0006

NOTICE OF INTENT TO TERMINATE  
WASTE DISCHARGE REQUIREMENTS

FOR

THE EVERGREEN PULP, INC., SAMOA PULP MILL  
ORDER NO. R1-2004-0047  
NPDES NO. CA0005894  
WDID NO. 1B77005OHUM

HUMBOLDT COUNTY

The California Regional Water Quality Control Board, North Coast Region, (hereafter Regional Water Board) finds that:

1. Waste Discharge Requirements (WDRs) Order No. R1-2004-0047 was issued to Stockton Pacific Enterprises, Inc. for the Samoa Pulp Mill (also referred to as the "Facility") on June 22, 2004, prescribing requirements for the discharge of waste from the operation of the Samoa Pulp Mill to the Pacific Ocean. WDR Order R1-2004-0047 reissued Order No. R1-2001-0063 under the new owner's name, and did not otherwise change the discharge prohibitions, effluent limitations, or receiving water limitations. On March 18, 2005, WDR Order No. R1-2004-0047 was administratively transferred to Evergreen Pulp, Inc., a subsidiary of Lee & Man Paper Manufacturing Limited.
2. Evergreen Pulp, Inc. (Discharger) was the owner of record and operated the Facility from January 21, 2005 to February 6, 2009. Over this period, the discharge of waste from the Facility by Evergreen Pulp, Inc. was governed by WDR Order No. R1-2004-0047, which also serves as a National Pollutant Discharge Elimination System (NPDES) Permit (Permit No. CA0005894) under the Clean Water Act. Evergreen Pulp, Inc. submitted a Report of Waste Discharge, dated April 28, 2005, and applied for an NPDES permit renewal to continue the discharge of approximately 13.6 millions gallons per day, on average, of untreated wastewater from the Facility. The application was deemed complete on November 5, 2007. A tentative Order was developed and made available for public comment on September 19, 2008. The tentative Order contained effluent limitations and requirements that were much more stringent than the previous permits. It is unclear whether or how the Facility, as it is currently designed and operated, would be able to meet the proposed effluent limitations.
3. On October 17, 2008, Evergreen Pulp, Inc. ceased operation of the Facility, stating that the shutdown was in response to unfavorable conditions in the pulp and paper market. In a letter dated October 21, 2008, Evergreen Pulp, Inc. indicated that it intended to resume production in three to six months depending on market conditions.

4. Ongoing operations at the Facility include the diversion of at least 3 million gallons per day of untreated surface water from the Mad River to the outfall pipe located at 40° 48' 28" latitude and 124° 12' 24" longitude. The Regional Water Board has determined that this diversion does not require a discharge permit.
5. On November 28, 2008, the Regional Water Board staff received information through the State Water Resources Control Board's Office of Chief Counsel of the impending sale of the Facility to ACE Mill, Inc. On December 18, 2008, Regional Water Board legal counsel contacted legal counsel for ACE Mill, Inc. in writing and explained that any new operator of the Facility would not be authorized to discharge under the existing NPDES permit and indicated the Regional Water Board's intent to reissue the permit with more stringent requirements than the existing permit. Legal counsel also requested that ACE Mill, Inc. submit a report of waste discharge within 30 days so that Regional Water Board staff could begin drafting a new permit for the mill, and stated that if the Regional Water Board did not receive a report of waste discharge, staff would likely recommend that the Regional Water Board rescind the current permit. No report of waste discharge was received, and the sale to ACE Mill, Inc. did not go through.
6. On January 7, 2009, the Regional Water Board issued a Notice of Intent to terminate Waste Discharge Requirements Order No. R1-2004-0047 in accordance with 40 CFR § 122.61(b) to prevent the automatic transfer of the existing NPDES permit from the Discharger to a new owner of the Facility.
7. On February 23, 2009, the Regional Water Board received written notice that the Samoa Acquisition Corporation had acquired the assets of the Samoa Pulp Mill from Evergreen Pulp on February 6, 2009. In the notice, Robert M. Simpson, on behalf of the Samoa Acquisition Corporation, requested that the Regional Water Board not terminate the existing NPDES permit for the Facility and instead transfer the current WDRs Order R1-2004-0047 to the Samoa Acquisition Corporation. The Samoa Acquisition Corporation has since been renamed Freshwater Pulp, Inc.
8. Paragraph 11(c) of WDRs Order No. R1-2004-0047 states that the permit is "not transferable except in compliance with 40 CFR § 122.61(b)." That section allows for automatic transfers of any NPDES permit to a new permittee if:
  - 1) the current permittee notifies the Regional Water Board at least 30 days in advance of the proposed transfer day;
  - 2) the notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
  - 3) the Regional Water Board does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit.
9. In addition to the Regional Water Board's ability to modify or revoke and reissue a permit when ownership of facility changes hands, both the Code of Federal

Regulations (CFR) and the Water Code provide a means for the Regional Water Board to terminate permits for cause. Water Code section 13381 and section 122.64 of the CFR state that a permit can be terminated during its term or denied renewal for causes such as: 1) violation of any condition contained in the requirements or permits; 2) obtaining the requirements by misrepresentation, or failure to disclose fully all relevant facts; or 3) a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge. Here, there is a record of the Facility's inability to consistently meet the requirements of its WDRs, and there is a strong indication that future operation of the Facility will require substantial upgrades in order to meet the effluent limitations proposed in the tentative Order prepared for the Facility. Changes to the effluent limitations are required to be consistent with current regulatory requirements.

10. This action to rescind WDRs is not subject to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.), pursuant to Title 14, California Code of Regulations, Sections 15060(c)(2) and 15061(b)(3). Based on the foregoing findings and the facts underlying them, it can be seen with certainty that this action to terminate the WDRs has no possibility to have a significant effect on the environment. The termination will not result in either a direct or reasonably foreseeable indirect physical change in the environment.
11. On <sup>April 23</sup> March 12, 2009, after due notice to Evergreen Pulp, Inc. and all other affected persons, the Regional Water Board conducted a public hearing at which time the Board received all evidence concerning termination of WDRs Order No. R1-2004-0047.

IT IS HEREBY ORDERED that, pursuant to section 122.61 and 122.64 of the Code of Federal Regulations and Water Code Section 13381, Order No. R1-2004-0047 is terminated upon the effective date of this Order, except for enforcement purposes.

I, Catherine Kuhlman, Executive Officer,  
do hereby certify that this Order with all  
attachments is a full, true, and correct  
copy of an Order adopted by the  
California Regional Water Quality  
Control Board, North Coast Region, on  
April 23, 2009.

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Catherine Kuhlman  
Executive Officer

California Regional Water Quality Control Board  
North Coast Region

Administrative Civil Liability Complaint No. R1-2008-0097

For  
Violation of Waste Discharge Requirements  
Order No. R1-2004-0047  
NPDES No. CA0005894

In the Matter of

Evergreen Pulp, Inc.  
Samoa Pulp Mill  
WDID No. 1B77005OHUM

Humboldt County

This Complaint assesses administrative civil liability for penalties and is issued to Evergreen Pulp, Inc. (hereafter the Discharger) for violations of Waste Discharge Requirements, Order No. R1-2004-0047, for the period from March 1, 2005, to December 31, 2007. The penalties are for both discretionary and mandatory minimum penalties, issued pursuant to Water Code section 13385, subdivisions (c), (h) and (i).

The Assistant Executive Officer of the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) finds the following:

1. The Discharger owns and operates the Samoa Pulp Mill, which is regulated by Waste Discharge Requirements Order No. R1-2004-0047, NPDES Permit No. CA0005894. The pulp mill is located at 1 TCF Drive on the north spit of Humboldt Bay near the community of Samoa.
2. The Samoa Pulp Mill has the capacity to produce an average of 700 tons per day of bleached Kraft market pulp. The mill is permitted to discharge a monthly average of up to 20 million gallons per day of wastewater through a submerged multi-port diffuser, with a dilution ratio of 115:1, located 8,200 feet offshore in the Pacific Ocean at a depth of 82 feet. The mill does not have wastewater treatment facilities and relies on process control and best management practices to meet the terms of the waste discharge requirements. Effluent from the mill consists of process wastewater from the Kraft pulping process, wastewater from maintenance activities, solids from the raw water treatment plant, blowdown from the recovery boiler, storm water, and freshwater flows to maintain the outfall during periods of pulp mill shutdown.
3. The Regional Water Board adopted Waste Discharge Requirements (WDRs) Order No. R1-2004-0047 for Stockton Pacific Enterprises, Inc. on June 22, 2004. The Order was subsequently transferred to the Discharger on March 18, 2005. These WDRs serve as a National Pollutant Discharge Elimination System (NPDES) Permit (No. CA0005894) under the Federal Clean Water Act.

4. This Complaint covers violations of effluent limitations and discharge prohibitions contained in WDRs that occurred from March 1, 2005, through December 31, 2007. The details of these violations are presented in Findings 12 and 13 of this Complaint. These violations are subject to the mandatory minimum penalties and civil liability provisions contained in California Water Code section 13385, subsections (c), (e), (h) and (i).
5. Among the provisions in the WDRs are requirements to implement a discharge monitoring program and prepare and submit monthly and annual NPDES self-monitoring reports to the Regional Water Board pursuant to Water Code section 13383. These reports are designed to determine compliance with effluent limitations contained in the WDRs.
6. Water Code section 13385, subdivision (a), provides for the imposition of civil liability by the Regional Water Board. Section 13385, subdivision (c), provides the maximum amount of civil liability that may be imposed by the Regional Water Board. The maximum amount is \$10,000 dollars per day in which the violation occurs, plus \$10 per gallon of waste discharged in excess of 1,000 gallons that is in violation of the NPDES permit and not susceptible to cleanup or is not cleaned up.
7. Water Code section 13385, subdivision (h)(1) establishes a mandatory minimum penalty of three thousand dollars (\$3,000) for each serious violation of an NPDES permit effluent limitation. Water Code section 13385, subdivision (h)(2) states that one type of serious violation occurs if the discharge from a facility regulated by an NPDES permit exceeds the effluent limitations for a Group I pollutant, as specified in Appendix A to Section 123.45 of title 40 of the Code of Federal Regulations, by 40 percent or more, or for a Group II pollutant, as specified in Appendix A to Section 123.45 of title 40 of the Code of Federal Regulations, by 20 percent or more.
8. Water Code section 13385, subdivision (i)(1) requires the Regional Water Board to assess a mandatory minimum penalty of three thousand dollars (\$3,000) for each violation, not counting the first three violations, if the discharger does any of the following for four or more times in any period of six consecutive months:
  - (a) Violates a waste discharge requirement effluent limit.
  - (b) Fails to file a report pursuant to section 13260.
  - (c) Files an incomplete report pursuant to section 13260.
  - (d) Violates a toxicity effluent limitation contained in the applicable waste discharge requirements where the waste discharges do not contain pollutant-specific effluent limitations for toxic pollutants.

Violations under section 13385, subdivision (i)(1) are referred to as "chronic" violations in this Complaint.

9. On February 19, 2002, the State Water Resources Control Board (State Water Board) adopted Resolution No. 2002-0040 amending the Water Quality Enforcement Policy (Enforcement Policy). The Enforcement Policy was approved by the Office of Administrative Law and became effective on July 30, 2002. The Enforcement Policy addresses, among other enforcement matters, issues related to assessing mandatory minimum penalties.
10. For the purpose of determining a Discharger's compliance with effluent limitations in its WDR Order/NPDES permit, the 30-day average is equivalent to the monthly average, which is defined as the arithmetic mean of all daily determinations made during a calendar month. Where less than daily sampling is required, the average shall be determined by the sum of all the measured daily discharges divided by the number of days during the calendar month when the measurements were made. If only one sample is collected during that period of time, the value of the single sample shall constitute the monthly average.

11. Portions of Order No. R1-2004-0047 that have been violated are as follows:

A. DISCHARGE PROHIBITIONS

5. The discharge of process chemicals prior to their intended use in the mill processes is prohibited.
6. The discharge of white liquor, green liquor, or black liquor from leaks, spills, or releases resulting from improper operation or maintenance of facilities is prohibited.

B. EFFLUENT LIMITATIONS

1. The permittee is authorized to discharge process wastewater, maintenance-related wastewater, solids from the raw water treatment plant, blowdown from the recovery boiler, and storm water from the pulpmill site and the adjacent sawmill from outfall Serial Number (SN) 001 to the Pacific Ocean. The discharge to outfall SN 001 in excess of the following limits is prohibited:

<u>Parameter</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Flow	mgd	20	25

<u>Parameter</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD <sub>5</sub> @ 20°C	lb/day <sup>1</sup>	11,270	21,630
Total Suspended Solids	lb/day <sup>2</sup>	22,960	42,560
pH	Standard Units	Within the limits of 5.0 to 9.0 <sup>3</sup>	

2. The permittee is authorized to discharge from the water treatment plant to outfall SN 001 to the Pacific Ocean. The discharge of an effluent at an internal monitoring station designated outfall SN 001, which shall be located so as to provide for sampling before the water treatment plant discharge effluent flows into outfall SN 001, in excess of the following limits is prohibited:

<u>Parameter</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Total suspended solids:			
Wet Season (Oct.-Apr.)	lb/day	70,000	400,000
Dry Season (May-Sept.)	lb/day	14,000	400,000

3. Toxic Materials Limitations. The Discharge of an effluent to the Pacific Ocean from outfall SN 001 in excess of the following limits is prohibited:

OBJECTIVES FOR THE PROTECTION OF MARINE AQUATIC LIFE

<u>Parameter</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
Adsorbable Organic Halides (AOX)	ug/l	20	-----

<sup>1</sup> Based on 40 CFR 430.22 and a production rate of 700 ADT/day

<sup>2</sup> Based on 40 CFR 430.22 and a production rate of 700 ADT/day

<sup>3</sup> Compliance shall be determined under 40 CFR 401.17 and 430.22

**LIMITATIONS FOR PROTECTION OF HUMAN HEALTH –  
CARCINOGENS**

<u>Parameter</u>	<u>Units</u>	<u>30-day Average</u>
Aldrin	ng/l	2.6

**12. Effluent Limitation Violations**

According to monitoring reports submitted by the Discharger for the period from March 1, 2005, through December 31, 2007, the Discharger exceeded effluent limitations twenty-nine times. Eight of the exceedances are serious violations in accordance with Water Code section 13385, subdivision (h). Twenty-one of the exceedances are chronic violations in accordance with Water Code section 13385, subdivision (i)(1). The mandatory minimum penalty amount for these violations under 13385, subdivisions (h) and (i), is \$72,000 and the maximum penalty amount under 13385 (c), computed without regard to statutory criteria for assessing civil penalties, is \$59,297,999,000 as shown in the following table:

<b>Effluent limitation Exceedances March 1, 2005 through December 31, 2007</b>						
<b>Date</b>	<b>Violation</b>	<b>Reported Value</b>	<b>Mandatory Minimum Penalty, and Maximum Discretionary</b>	<b>Number of Days Used for Assessing Maximum Liability</b>	<b>Amount Discharged in Excess of 1,000 Gal, and Not Cleaned Up</b>	<b>Maximum Potential Penalty, \$10,000 /day and \$10 per gallon discharged</b>
04/30/05	Exceeded Monthly Average BOD Limit of 11,270 lbs/day	11,735 lbs/day	1 <sup>st</sup> chronic \$0	30	418,799,000 Gallons	\$4,188,000,000
05/31/05	Exceeded Monthly Average BOD limit of 11,270 lbs/day	14,460 lbs/day	2 <sup>nd</sup> chronic \$0	31	436,099,000 Gallons	\$4,361,000,000
05/22/05	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	23,878 lbs/day	3 <sup>rd</sup> chronic \$0	1	14,299,000 Gallons	\$143,000,000
07/14/05	Exceeded Daily Maximum AOX limit of 20 ug/l	30 ug/l	Serious \$3,000	1	13,599,000 Gallons	\$136,000,000
09/30/05	Exceeded Monthly Average BOD limit of 11,270 lbs/day	12,093 lbs/day	Chronic \$3,000	30	448,999,000 Gallons	\$4,490,290,000
10/31/05	Exceeded Monthly Average BOD limit of 11,270 lbs/day	12,488 lbs/day	Chronic \$3,000	31	479,969,000	\$4,799,690,000

<b>Effluent limitation Exceedances</b> <b>March 1, 2005 through December 31, 2007</b>						
<b>Date</b>	<b>Violation</b>	<b>Reported Value</b>	<b>Mandatory Minimum Penalty, and Maximum Discretionary</b>	<b>Number of Days Used for Assessing Maximum Liability</b>	<b>Amount Discharged in Excess of 1,000 Gal, and Not Cleaned Up</b>	<b>Maximum Potential Penalty, \$10,000 /day and \$10 per gallon discharged</b>
11/30/05	Exceeded Monthly Average BOD limit of 11,270 lbs/day	11,599 lbs/day	Chronic \$3,000	30	441,799,000 Gallons	\$4,418,290,000
12/01/05	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	57,263 lbs/day	Chronic \$3,000	1	14,699,000 Gallons	\$147,000,000
12/20/05	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	44,953 lbs/day	Chronic \$3,000	1	15,399,000 Gallons	\$154,000,000
12/22/05	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	56,866 lbs/day	Chronic \$3,000	1	14,799,000 Gallons	\$148,000,000
12/29/05	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	51,626 lbs/day	Chronic \$3,000	1	14,599,000 Gallons	\$146,000,000
01/01/06	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	44,460 lbs/day	Chronic \$3,000	1	11,399,000 Gallons	\$114,000,000
01/02/06	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	66,336 lbs/day	Serious \$3,000	1	15,099,000 Gallons	\$151,000,000
01/11/06	Exceeded 30-day Average Aldrin limit of 2.6 ng/l	5.5 ng/l	Serious \$3,000	30	436,699,000 Gallons	\$4,367,290,000
02/02/06	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	43,944 lbs/day	Chronic \$3,000	1	14,399,000 Gallons	\$144,000,000
02/28/06	Exceeded Monthly Average BOD limit of 11,270 lbs/day	12,461 lbs/day	Chronic \$3,000	28	380,299,000 Gallons	\$3,803,270,000
03/06/06	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	64,726 lbs/day	Serious \$3,000	1	13,899,000 Gallons	\$139,000,000
03/07/06	Exceeded Daily Maximum BOD	39,012 lbs/day	Serious \$3,000	1	13,399,000 Gallons	\$134,000,000

Effluent limitation Exceedances March 1, 2005 through December 31, 2007						
Date	Violation	Reported Value	Mandatory Minimum Penalty, and Maximum Discretionary	Number of Days Used for Assessing Maximum Liability	Amount Discharged in Excess of 1,000 Gal, and Not Cleaned Up	Maximum Potential Penalty, \$10,000 /day and \$10 per gallon discharged
	limit of 21,630 lbs/day					
03/07/06	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	103,437 lbs/day	Serious \$3,000	1	Flow is accounted for above	\$10,000
03/16/06	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	22,230 lbs/day	Chronic \$3,000	1	13,999,000	\$139,990,000
03/31/06	Exceeded Monthly Average BOD limit of 11,270 lbs/day	17,307 lbs/day	Serious \$3,000	31	422,599,000 Gallons	\$4,226,300,000
03/31/06	Exceeded Monthly Average TSS limit for water treatment plant of 70,000 lbs/day	76,287 lbs/day	Chronic \$3,000	31	Flow is accounted for above	\$310,000
06/30/06	Exceeded Monthly Average BOD limit of 11,270 lbs/day	11,705 lbs/day	Chronic \$3,000	30	451,699,000 Gallons	\$4,517,290,000
01/31/07	Exceeded Monthly Average BOD limit of 11,270 lbs/day	11,654 lbs/day	1 <sup>st</sup> Chronic \$0	31	451,399,000 Gallons	\$4,514,300,000
04/26/07	Exceeded Daily Maximum BOD limit of 21,630 lbs/day	26,550 lbs/day	2 <sup>nd</sup> Chronic \$0	1	13,299,000 Gallons	\$133,000,000
04/26/07	Exceeded Daily Maximum TSS limit of 42,560 lbs/day	61,397 lbs/day	3 <sup>rd</sup> Serious \$3,000	1	Flow is accounted for above	\$10,000
05/31/07	Exceeded Monthly Average BOD limit of 11,270 lbs/day	15,058 lbs/day	Chronic \$3,000	31	484,199,000 Gallons	\$4,842,300,000
06/30/07	Exceeded Monthly Average BOD limit of 11,270 lbs/day	12,409 lbs/day	Chronic \$3,000	30	450,999,000 Gallons	\$4,510,290,000

Effluent limitation Exceedances March 1, 2005 through December 31, 2007						
Date	Violation	Reported Value	Mandatory Minimum Penalty, and Maximum Discretionary	Number of Days Used for Assessing Maximum Liability	Amount Discharged in Excess of 1,000 Gal, and Not Cleaned Up	Maximum Potential Penalty, \$10,000 /day and \$10 per gallon discharged
07/31/07	Exceeded Monthly Average BOD limit of 11,270 lbs/day	12,738 lbs/day	Chronic \$3,000	31	442,999,000 Gallons	\$4,430,300,000
<b>Totals</b>			\$72,000			\$59,297,930,000
<b>Maximum Potential Civil Penalty</b>						<b>\$59,297,999,000</b>

### 13. Discharge Prohibitions Violations

During the period between March 1, 2005, and December 31, 2007, the Discharger reported three spills in violation of discharge prohibitions. A summary of the spills, together with the applicable maximum statutory civil penalties computed without regard to the statutory criteria for assessing civil penalties, follows:

Summary of Spills March 1, 2005, though December 31, 2007			
Date	Event	Estimated Volume Discharged (gallons)	Maximum Potential Penalty, \$10,000 /day and \$10 per gallon discharged
04/18/05	Spilled white liquor to outfall	±246 gallons	\$10,000
06/07/05	Smelt tank overflow spilled green liquor to outfall	9,000-15,000 gallons (use midpoint of 12,000 gallons)	\$10,000 plus \$110,000
08/02/05	Spilled black liquor to outfall	500 gallons	\$10,000
<b>Maximum Potential Civil Penalty</b>			<b>\$140,000</b>

14. In determining the amount of any civil liability, pursuant to Water Code section 13385, subdivision (e), the Regional Water Board is required to take into account the nature, circumstances, extent, and gravity of the violation, whether the discharge is susceptible to cleanup or abatement, the degree of toxicity of the discharge, and, with respect to the violator, the ability to pay, the effect on its ability to continue its business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violation, and other matters that justice may require. The Regional Water Board is also required to consider the requirement in this section that states that, at a minimum, liability shall be assessed at a level that recovers the economic benefit, if any derived from the acts that constitute the violation(s).

15. The Regional Water Board staff and the Discharger convened settlement negotiations concerning the violations alleged in this Complaint. One topic of the negotiations was the economic benefit received by the Discharger in connection with the above violations. Prevention of these violations required certain capital improvements to the mill and the hiring of certain staff. By avoiding and delaying these costs, the Discharger obtained an economic benefit within a broad range of estimates, depending on the source, the Discharger's estimate being on the low end of the range and the Regional Water Board staff's estimate being on the high end. Based on the information provided by the discharger and other information on cost of compliance analyzed by staff, and taking into consideration the uncertainty regarding the needed method of compliance and the related compliance costs, the parties have agreed, for the purposes of settlement, that economic benefit is deemed to be \$386,908.
16. After considering all the factors listed in Finding 14, and to avoid the delay and expense from litigation, the Regional Water Board staff has determined that it is appropriate to accept a civil penalty of \$463,000 in settlement of the above violations. The law mandates the Regional Water Board to, at a minimum, recover economic benefit, or mandatory penalties, whichever is highest. The settlement amount of \$463,000 complies with that requirement.
17. The issuance of this Complaint is an enforcement action to protect the environment, and is therefore exempt from provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.) pursuant to title 14, California Code of Regulations sections 15308 and 15321, subdivision (a)(2).

EVERGREEN PULP, INC. IS HEREBY GIVEN NOTICE THAT:

1. Based on a review of the above facts and required factors, the Assistant Executive Officer of the Regional Water Board is issuing this Complaint to the Discharger for a penalty in the amount of \$463,000.
2. A hearing will be conducted on this Complaint by the Regional Water Board on October 23 2008, unless the Discharger waives the right to a hearing by signing and returning the waiver form attached to this Complaint within thirty days of the date of this Complaint. By doing so, Evergreen Pulp, Inc. agrees to pay the \$463,000 penalty in full to the State Water Pollution Cleanup and Abatement Account ("Account") within fifteen days of the date of its receipt of notice that, subject to timely payment of the foregoing penalty amount by Discharger, the settlement has not been modified or terminated and has been made final without a hearing.

3. If the Discharger waives the hearing and agrees to pay the foregoing penalty amount as described above, the resulting settlement may become final, subject to payment of the penalty by Discharger, on the next day after the thirty-day public comment period on this Complaint ends. If there are significant public comments, the Assistant Executive Officer may withdraw the Complaint, issue a new complaint, schedule and hold a hearing before the Regional Water Board, or take other appropriate action.
4. If a hearing is held, the Regional Water Board may impose an administrative civil liability in the amount proposed or for a different amount; decline to seek civil liability; or refer the matter to the Attorney General to have a Superior Court consider enforcement.
5. Regulations of the United States Environmental Protection Agency require public notification of any proposed settlement of the civil liability occasioned by violation of the Clean Water Act, including NPDES permit violations. The foregoing procedure for noticing the Complaint for public review and comment satisfies this federal requirement.

---

Luis G. Rivera  
Assistant Executive Officer

August 1, 2008



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

NCRWQCB

Reply to:  
WTR-5

JUN 28 2010

<input type="checkbox"/> EO	<input type="checkbox"/> WMgmt	<input type="checkbox"/> Admin
<input type="checkbox"/> AEO	<input type="checkbox"/> Timber	<input type="checkbox"/> Legal
<input type="checkbox"/> Reg/NPS	<input type="checkbox"/> Cleanups	<input type="checkbox"/> Other

June 24, 2010

Mr. John Short  
California Regional Water Quality Control Board  
North Coast Region  
5550 Broadway Blvd., Ste. A  
Santa Rosa, CA 95403-1072

Re: Freshwater Tissue Company, Samoa Pulp Mill (NPDES No. CA0005894, Order No. R1-2010-0033) and Cease and Desist Order (No. R1-2010-0039)

Dear Mr. Short:

We have reviewed selected provisions of the subject draft National Pollutant Discharge Elimination System ("NPDES") permit and cease and desist order ("CDO") for Freshwater Tissue Company, Samoa Pulp Mill. Considerable effort by Regional Water Board staff has gone into development of the draft permit and fact sheet and draft CDO. We appreciate the close coordination with your staff developing the permit. Our brief comments on these draft documents are detailed below.

Proper Application of Effluent Limitations Guidelines

Based on our review of the draft permit and fact sheet, we conclude that Regional Water Board staff have properly applied U.S. EPA's national effluent limitations guidelines in order for the permitted industrial facility to properly operate under the NPDES program. This is achieved through the correct application of technology-based effluent limitations required under sections IV.A.1 and 2 of the draft permit. We recognize that compliance with these limitations will necessitate construction and operation of a secondary treatment plant at the mill site.

Inability of Recommencing Discharge to Immediately Comply with Effluent Limitations following Permit Termination for Noncompliance

The existing facility has been operated by previous owners in a state of noncompliance with Clean Water Act ("CWA") requirements for many years. We are concerned that the new owner, Freshwater Tissue Company, has decided to reopen and operate the existing facility, which cannot achieve immediate compliance with effluent limitations guidelines that all existing facilities must meet in order to discharge under the NPDES program. Moreover, Freshwater Tissue has offered no clear assurances that actions necessary to comply with the new permit as soon as possible are being taken.

As new NPDES permit development based on known national effluent limitations guidelines has been underway for more than six months, it is reasonable to expect that much of the facility planning and engineering for achieving compliance with the technology-based effluent limitations in the permit should have already occurred. We recommend that the Regional Water Board reevaluate and expedite not only the CDO milestone date for submitting final specifications and design drawings to the Executive Officer, but also all subsequent milestone dates (for constructing and operating the treatment plant).

Finally, we expect the Regional Water Board to act promptly to enforce, or terminate the permit in accordance with 40 CFR 122.64, if milestones in the CDO are not met by the discharger. In providing these comments, we are expressing no opinion as to whether U.S. EPA will decide to take independent enforcement action in the event the discharger violates the terms and conditions of its NPDES permit or otherwise violates the CWA.

#### RPA's for Process Wastewater and Water Treatment Plant Discharges

The fact sheet states that the RPA shows reasonable potential for the discharge to exceed Ocean Plan Table B objectives for HCH, TCDD equivalents, and total DDT. Consequently, WQBELs are required for Discharge Point 001. While the fact sheet suggests the source of these contaminants may be the water treatment plant, inasmuch as investigations into the possible sources of these contaminants identifies industrial stormwater, the Discharger should provide stormwater treatment and the best management practices necessary to comply with WQBELs.

#### Water Treatment Plant Discharge and State Water Board Resolution 87-103

We support inclusion of the "Ocean Plan Exception" reopener provision in the draft permit. The 2005 California Ocean Plan exceptions provision clarifies that all exceptions issued by the State Water Board and in effect at the time of triennial reviews will be reviewed. We do not know whether the State Water Board considered Resolution 87-103 "in effect" at the time of the 2004 Triennial Review. Discharger NPDES permits have included this exception for many years without further State Water Board review.

Pursuant to the Ocean Plan, the State Water Board can grant exceptions from provisions of statewide plans that are not water quality standards or provisions for implementation of water quality standards (e.g., those implementing NPDES regulations at 40 CFR 122). Such exceptions do not require U.S. EPA's CWA approval pursuant to CWA section 303(c). However, in its oversight of California's NPDES program, U.S. EPA may review such exceptions, consistent with CWA section 402(d) and 40 CFR 123.44. Consequently, we recommend that Resolution 87-103 be considered for review by the State Water Board concurrent with treatment upgrades at the mill in order to ensure that the discharge is in full compliance with all applicable requirements on or before the September 21, 2013 deadline specified in the CDO.

If you have questions regarding these comments, please contact me at (414) 972-3464 or Robyn Stuber at (415) 972-3524.

Sincerely,

A handwritten signature in dark ink, appearing to read "David W. Smith". The signature is fluid and cursive, with the first name "David" and last name "Smith" clearly distinguishable.

David W. Smith, Manager  
NDPES Permits Office

cc: Mr. Bob Simpson, Freshwater Tissue Company



Linda S. Adams  
Secretary for  
Environmental Protection

**California Regional Water Quality Control Board  
North Coast Region  
Geoffrey M. Hales, Chairman**

[www.waterboards.ca.gov/northcoast](http://www.waterboards.ca.gov/northcoast)  
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403  
Phone: (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135



Arnold  
Schwarzenegger  
Governor

March 17, 2010

Mr. Bob Simpson  
Freshwater Tissue Co.  
P.O. Box 248  
Samoa, CA 95564

Ms. April Ingram  
Louisiana-Pacific Building  
414 Union Street, Suite 2000  
Nashville, TN 37219

Dear Mr. Simpson and Ms. Ingram:

Subject: Soil and Groundwater Cleanup Schedule

File: Evergreen Pulp Inc., former, One TCF Drive, Samoa, California  
Case No. 1NHU892

The California Regional Water Quality Control Board (Regional Water Board) received an electronic version of the subject matter on March 1, 2010 and hard copy on March 4, 2010 from SHN Consulting Engineers & Geologists, Inc. for the facility located at One TCF Drive in Samoa, California (Site). Our letter of February 8, 2010 cited the due date of March 1, 2010 for a schedule to implement three bulleted items.

- Completion of Conceptual Site Model for each Area of Interest (AOI) and Site-Wide.
- Feasibility Study by AOI and Site-wide.
- Remedial Action Plan by AOI and Site-wide.

These bulleted items are the next necessary steps in the investigation and cleanup of soil and groundwater at the Site.

We appreciate the timeliness of the schedule submittal, however, we have some concerns with its generic content and extended time schedule.

As we stated in various correspondences and discussed at our last several meetings, there are specific areas of interest (AOIs) (i.e. AOI-8 VOC Area Southeast) with a significant discharge threat to Humboldt Bay. Other AOIs threaten groundwater and not Humboldt Bay. Therefore, investigation and cleanup of some AOIs should be on a more accelerated schedule to prevent any discharge to Humboldt Bay.

**California Environmental Protection Agency**

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In addition, the proposed schedule does not include any AOI-specific and Site-wide elements that we have historically requested. The schedule indicates that the site conceptual model will be submitted in first quarter 2011. This is not acceptable for the entire site, considering the amount of sampling data that exists for the site. A site conceptual model may be generated in the near future and updated as more data is collected in the future. A site conceptual model will also identify data gaps and may be used to determine the readily apparent remediation techniques that may be addressed in a feasibility study. An extended delay for the site conceptual model is not appropriate.

Further, the proposed schedule does not attempt to implement concomitant activities which appear to extend the proposed schedule. In the redevelopment and cleanup and abatement of industrial sites such as this, many activities and/or AOIs overlap and completing activities in more than one area results in economic and time savings.

As you are aware, eliminating the threatened discharge to Humboldt Bay is of serious concern to Regional Water Board staff. We would like to request another meeting and/or conference call to discuss revisions to your proposed schedule in order to more rapidly cleanup soil and groundwater pollution that reduces the threat of discharge to Humboldt Bay. Our discussions in the past have always been productive and resulted in your achieving compliance with Regional Water Board directives and eliminating the need for additional enforcement actions.

We are proposing a meeting and/or conference call here in Santa Rosa as soon as possible and no later than the end of April 2010 in an effort to revise the submitted schedule. Please submit time availabilities to me by April 1, 2010. Section 13267 of the California Water Code contains the authority for this request.

If you have questions or require clarification on the content of this letter please contact me at (707) 576-2556 or via email at [DParson@waterboards.ca.gov](mailto:DParson@waterboards.ca.gov)

Sincerely,



David W. Parson, PG No. 6037, CEG No. 1889  
Engineering Geologist

100317\_DWP\_1NHU892\_cleupschdie

cc: Ms. Kim Niemeyer, SWRCB, Office of Chief Council  
Mr. David Cooke, Allen Matkins Leck Gamble Mallory & Natsis LLP,  
Three Embarcadero Center, 12<sup>th</sup> Floor, San Francisco, CA 94111-4074  
Mr. Michael Blosser, Louisiana-Pacific Corporation, 414 Union Street, Suite 2000,  
Nashville, TN 37219  
Mr. Mike Foget, SHN Consulting Engineers & Geologists, Inc.,  
812 West Wabash Avenue, Eureka, CA 95501-2138

**California Environmental Protection Agency**  
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Linda S. Adams  
Secretary for  
Environmental Protection

## California Regional Water Quality Control Board North Coast Region

Geoffrey M. Hales, Chairman

[www.waterboards.ca.gov/northcoast](http://www.waterboards.ca.gov/northcoast)  
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403  
Phone: (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135



Arnold  
Schwarzenegger  
Governor

February 17, 2010

Mr. Bob Simpson  
Freshwater Tissue Co.  
P.O. Box 248  
Samoa, CA 95564

Ms. April Ingram  
Louisiana-Pacific Building  
414 Union Street, Suite 2000  
Nashville, TN 37219

Dear Mr. Simpson and Ms. Ingram:

Subject: MRP R1-2010-0023-typos and corrections

File: Evergreen Pulp Inc., former, One TCF Drive, Samoa, California  
Case No. 1NHU892

The California Regional Water Quality Control Board (Regional Water Board) Executive Officer issued Monitoring and Reporting Program (MRP) Order R1-2010-0023 on February 8, 2010. The MRP contains and Attachment A with specific requirements for laboratory analysis of groundwater samples. Two typographical errors have been identified on Attachment A.

The addition of arsenic analysis at MW-1 and the addition of total chromium, manganese, and nickel analyses at MW-15 onto Attachment A are necessary. Attached is revised Attachment A that reflects these corrections. The body of MRP R1-2010-0023 remains the same.

If you have questions or require clarification on the content of this letter please contact me at (707) 576-2556 or via email at [DParson@waterboards.ca.gov](mailto:DParson@waterboards.ca.gov)

Sincerely,

*Original signed by*

David W. Parson, PG No. 6037, CEG No. 1889  
Engineering Geologist

100218\_DWP\_1NHU892\_EvergreenPulpMill\_MRP\_transltr\_tpos

Enclosure: Monitoring and Reporting Order No. R1-2010-0023 Attachment A-revision 1

**California Environmental Protection Agency**

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cc: Ms. Kim Niemeyer, SWRCB, Office of Chief Council  
Mr. David Cooke, Allen Matkins Leck Gamble Mallory & Natsis LLP,  
Three Embarcadero Center, 12<sup>th</sup> Floor, San Francisco, CA 94111-4074  
Mr. Michael Blosser, Louisiana-Pacific Corporation, 414 Union Street, Suite 2000,  
Nashville, TN 37219  
Mr. Roland Ruber, SHN Consulting Engineers & Geologists, Inc., 812 West  
Wabash Avenue, Eureka, CA 95501-2138

# Pulp Mill Groundwater Monitoring and Reporting Program No. R1-2010-0023

## Attachment A-revision 1

Areas of Interest (AOIs)	VOCs <sup>1</sup> 8260B (includes BTEX <sup>2</sup> /FO <sup>3</sup> )	TPHG <sup>4</sup> 3510/8015M	TPHD <sup>5</sup> 3510/8015M	TPHMO <sup>6</sup> 3510/8015M	Color 2120B	TDS <sup>7</sup> 2540	Cr VI <sup>8</sup> 3500-Cr B	Metals <sup>9</sup> 6010/7000 series or 200.8
<b>AOI-1: Black Liquor Process and Recovery Area</b>								
MW-2					X			As, Cr, Mn, Ni
MW-5					X			As, Cr, Mn, Ni
MW-5D					X	X	X	As, Cr, Mn, Ni
MW-6	X				X			As
<b>AOI-2: Former Bleach Plant</b>								
MW-8					X			As, Mn
MW-14	X				X			As, Cr, Mn, Ni
<b>AOI-3: Recaulsticizing Area</b>								
MW-1		X	X		X			As
MW-3					X		X	As
MW-4					X		X	As
MW-15							X	As, Cr, Mn, Ni
MW-15D						X	X	As, Cr, Mn, Ni
MW-21D						X	X	As, Cr, Mn, Ni
<b>AOI-4: Hot Water Heater/Former Diesel AST</b>								
No monitoring wells								
<b>AOI-5: Chemical Storage Area</b>								
MW-7	X				X		X	As, Cr, Mn, Ni
<b>AOI-6: Leach Field</b>								
No monitoring wells								
<b>AOI-7: Boneyard</b>								
MW-16	X						X	As, Cr, Mn, Ni
MW-16D	X					X		As, Cr, Mn, Ni
MW-17	X							As, Cr, Mn, Ni
MW-18	X							As, Cr, Mn, Ni
MW-19	X							As, Cr, Mn, Ni



Linda S. Adams  
Agency Secretary

**California Regional Water Quality Control Board  
North Coast Region  
Geoffrey M. Hales, Chairman**

[www.waterboards.ca.gov/northcoast](http://www.waterboards.ca.gov/northcoast)  
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Arnold  
Schwarzenegger  
Governor

July 19, 2010

Ms. April Ingram  
Louisiana-Pacific Building  
414 Union Street, Suite 2000  
Nashville, TN 37219

Mr. Bob Simpson  
Freshwater Tissue Co.  
P.O. Box 248  
Samoa, CA 95564

Dear Ms. Ingram and Mr. Simpson:

Subject: AOI-8 Initial Feasibility Study and Site Investigation Work Plan-Technical Review

File: Evergreen Pulp Incorporated, former, One TCF Drive, Samoa, California  
Case No. 1NHU892

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) staff reviewed the *AOI-8 Initial Feasibility Study and Site Investigation Work Plan for the Former Louisiana-Pacific Pulp Mill, One TCF Drive, Samoa, California; Case No. 1NHU892 (FS)*. A hard copy version of the FS was received on June 30, 2010. The FS was prepared by SHN Consulting Engineers & Geologists, Inc. (SHN) on the behalf of Louisiana-Pacific Corporation (LPC). The former Evergreen Pulp Inc. facility (Site) is now owned by Freshwater Tissue Company. The Site is located on the Samoa peninsula within Humboldt County, California. The FS was prepared under the direct supervision of a California-licensed Professional Civil Engineer (PE), Mr. Michael K. Foget of SHN.

**Background**

The FS was prepared in accordance with the revised schedule formalized on Table 1 within SHN's April 20, 2010 letter. Regional water Board staff concurred with the Table 1 schedule in our May 4, 2010 letter.

The portion of the Site known as Area of Interest (AOI)-8 is also known as the VOC Area Southeast. This area has been known to be a discharge threat to Humboldt Bay for more than five years because of its close proximity to Humboldt Bay and the fact that lateral groundwater flow direction is toward Humboldt Bay. The contaminants of concern (COCs) in AOI-8 include a host of chlorinated volatile organic compounds (CVOCs).

***California Environmental Protection Agency***

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Lastly, some general water quality parameters were measured in wells MW-11, MW-13, and MW-13D. Listed below in tabular format are those measurements expressed in specified measurement units.

Well ID	ORP (mV)	EC (umhos/cm)	pH (std. Units)	Color (color units)	TDS (mg/L)
MW-11	85	296.5	7.14	15	NM
MW-13	27	286.3	7.13	5.0	NM
MW-13D	-68	538	6.92	NM	NM

Notes: ORP means oxidation reduction potential, EC means electrical conductivity, TDS means total dissolved solids.

These general water quality parameters are indicative of freshwater groundwater although it is becoming more saline with depth and increasing depth also yields declining ORP magnitude indicative of more reducing conditions. The measurement of pH indicates near neutral conditions regardless of depth and the measurement of color units are decreasing with depth. The color measurement magnitude at MW-11 equals the regulatory threshold for color units.

Historically, AOI-8 has had significant amount of soil, soil gas, and groundwater investigations along with one interim remedial action (IRA). The IRA involved the physical removal of CVOC-impacted soils. FS Figure 3 shows the locations and types of historical investigation activities and the IRA activity.

### FS Review

Two specific types of nomenclature were identified in the FS which are atypical. First, the use of initial in the title of the FS is puzzling because it is not used in any document leading up to the preparation of the FS. In fact, the FS is not a typical FS because it does not compare identified remedial action alternatives with the typical criteria used in evaluating remedial alternatives against one another. The FS does not identify the criteria used to evaluate one remedial alternative from another. The FS is better labeled an FS work plan. The second atypical type of nomenclature used in the FS is the term used to differentiate identified remedial action types, namely "aggressive." This term is used in stead of the commonly applied term "active." We request that standard terminology passive versus active be used for clarity purposes.

We request that all criteria be submitted that will be used to evaluate one type of identified remedial action alternative versus another type of remedial alternative.

We request that the no action alternative be included in the listing of identified remedial alternatives, under the passive category.

We concur with the need to implement pilot-scale testing and request a schedule to implement the testing. We also request all criteria that the pilot scale testing will be

The recent groundwater monitoring effort in compliance with Regional Water Board Monitoring and Reporting Program (MRP) No. R1-2010-0023 continues to show the presence of CVOCs including; tetrachloroethene (PCE), trichloroethene (TCE), and Cis-1,2-dichloroethene (Cis-1,2-DCE). The magnitude of CVOCs are shown in tabular format below (units are in micrograms per liter [ug/l]) along with the wells in which the CVOCs were measured. Note that the deeper screened well (MW-13D) did not have measured CVOCs at concentrations greater than the testing laboratory's reporting limits of 1 ug/L.

Well IDs	PCE	TCE	Cis-1,2-DCE
MW-11	40	5.7	8.9
MW-13	49	24	9.0
MW-13D	<1.0	<1.0	<1.0

These results are compared to the regulatory thresholds (water quality objectives [WQOs]) for shallow groundwater designated with a beneficial use of municipal, and deeper groundwater and saline surface waters designated with the State Water Resource Control Board's (State Water Board) Enclosed Bays & Estuaries criteria. The numeric WQOs are derived from the State Water Board's on-line Water Quality Goal database and they are shown in tabular format below. Units are in ug/L.

PCE	TCE	Cis-1,2-DCE
0.06 <sup>3</sup>	1.7 <sup>3</sup>	6 <sup>1</sup>
8.85 <sup>5</sup>	81 <sup>2</sup>	NA

Notes: NA means not available.

Superscripts: 1 is the CDHS primary MCL, 2 is the Enclosed Bays & Estuaries WQO, and 3 is the California PHG.

Clearly, the shallow groundwater WQOs are exceeded for the identified CVOCs. In addition to the CVOCs, dissolved metals were measured and some of these levels also exceeded WQOs in both shallow and deeper groundwater. Listed below in tabular format are the test results, reported in units of ug/L.

Well ID	Arsenic	Total Chromium	Manganese
MW-11			7.0
MW-13	11		
MW-13D	43	7.3	410

Listed below in tabular format are regulatory thresholds for the identified dissolved metals. Units are in ug/L.

	Arsenic	Total Chromium	Manganese
Ground-water	0.004 <sup>1</sup>	50 <sup>2</sup>	50 <sup>2</sup>
Enclosed Bays & Estuaries	36	NA	NA

Notes: NA means not available.

Superscripts: 1 means California PHG, 2 means CDHS MCL.

*California Environmental Protection Agency*

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Ms. April Ingram  
Mr. Bob Simpson

July 19, 2010

evaluated to determine whether any pilot-scale test is successful and hence would be retained for potential full-scale implementation.

In principal we concur with the site investigation work plan components of the FS. However, we request the preparation of COC contour maps for each WBZ in AOI-8 so that proposed sampling can be evaluated against the data gaps the FS say exist.

**Conclusions**

Our review of the FS identified some requests. The basis for the requests is found in California Water Code section 13267. Please provide written document with 45 days of the date of this letter

If you have questions or require clarification on the content of this letter please contact me at (707) 576-2556 or via email at [DParson@waterboards.ca.gov](mailto:DParson@waterboards.ca.gov).

Sincerely,

Original signed by

David W. Parson, PG No. 6037, CEG No. 1889  
Engineering Geologist

100719\_DWP\_1NHU892\_AOI8\_FSSIW/Prev

cc: Ms. Kim Niemeyer, SWRCB, Office of Chief Council  
Mr. David Cooke, Allen Matkins Leck Gamble Mallory & Natsis LLP,  
Three Embarcadero Center, 12<sup>th</sup> Floor, San Francisco, CA 94111-4074  
Mr. Michael Blosser, Louisiana-Pacific Corporation, 414 Union Street, Suite 2000,  
Nashville, TN 37219  
Mr. Mike Foget, SHN Consulting Engineers & Geologists, Inc.,  
812 West Wabash Avenue, Eureka, CA 95501-2138

***California Environmental Protection Agency***

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**Conclusions**

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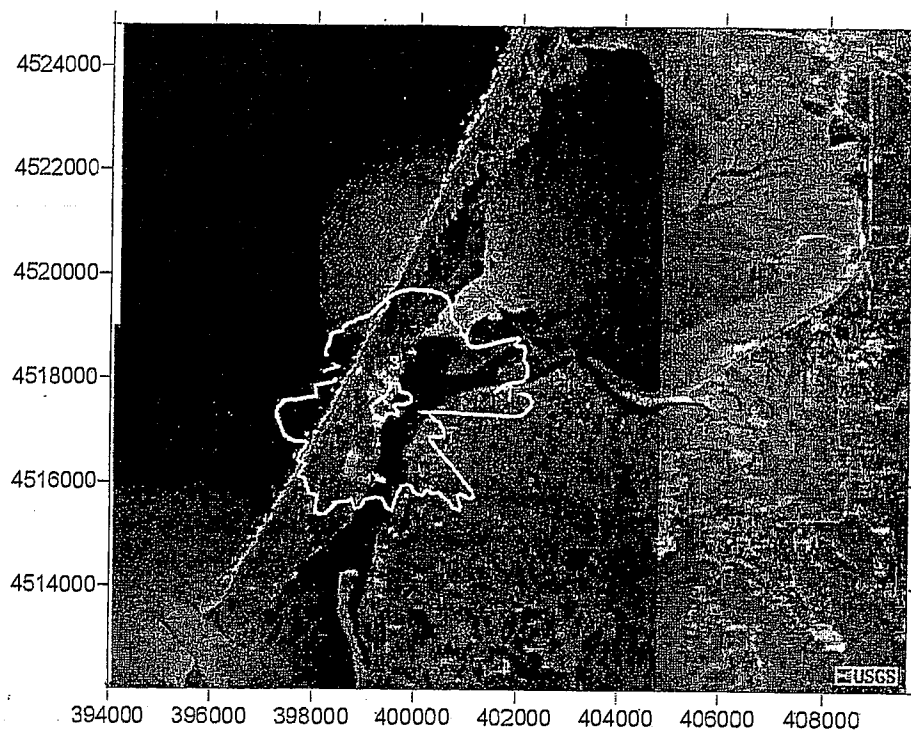


FIGURE 5-1  
Plot of Hazard Index for Acute Exposures

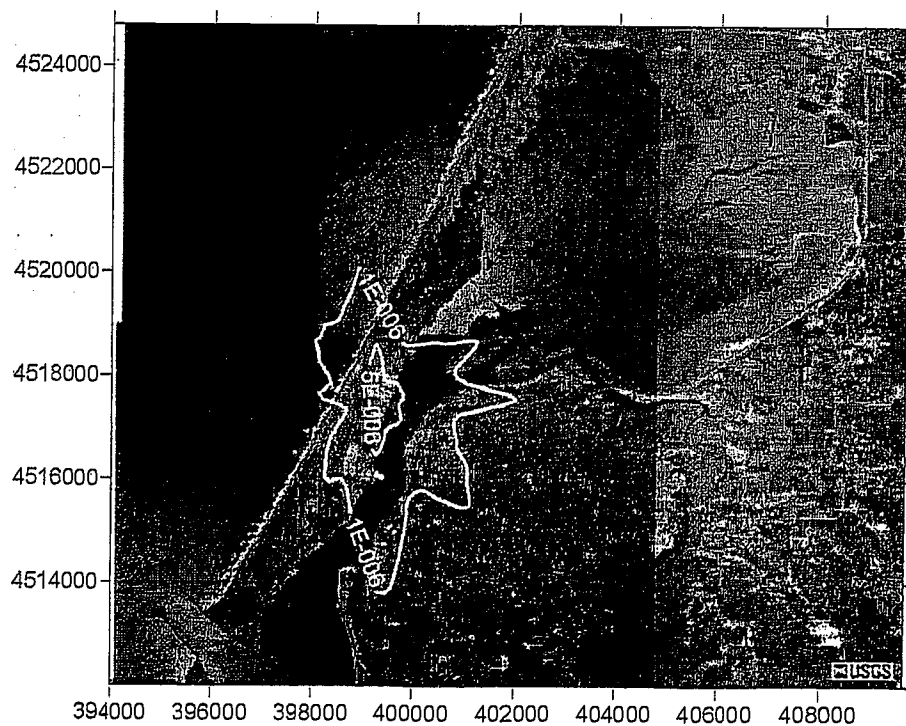


FIGURE 5-2  
Plot of Lifetime Cancer Risk for Residential Exposures

# Allen Matkins

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July 13, 2010

Ms. Catherine Kuhlman  
Executive Officer  
California Regional Water Quality Control Board  
North Coast Region  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403  
Attn: Charles Reed

**Re: Freshwater Tissue Company LLC  
Samoa Pulp Mill  
Proposed Cease & Desist Order No. R1-2010-0039  
NPDES Permit No. CA00005894**

Dear Ms. Kuhlman:

I write on behalf of Freshwater Tissue Company LLC ("Freshwater") to summarize Freshwater's concerns regarding a letter submitted to the Regional Water Board, dated July 9, 2010, and signed by Mr. Sato of the State Water Resources Control Board's ("State Board's") Office of Enforcement. The State Board's letter contains comments on and suggestions for modifications of the draft Cease & Desist Order No. R1-2010-0039, which the Regional Water Board is scheduled to consider at its meeting on July 15, 2010. I address the State Board's comments in the order presented.

1. The State Board comments that the "financial assurances" provision in the draft CDO is of special importance due to a default by Evergreen Pulp, Inc. on its obligation to pay civil penalties for past violations. Since Freshwater is not responsible for Evergreen's liabilities, the point of this comment seems to be to suggest that Evergreen's default is a meaningful predictor of performance by Freshwater. But Freshwater has never had any business relationship with Evergreen other than as an acquirer, at arm's length, of certain of Evergreen's assets. Unlike any prior owner of the Mill, moreover, Freshwater has committed to install secondary wastewater treatment, documented in an enforceable CDO, at significant financial cost, in order to ensure compliance with the BOD effluent limitations imposed by the Regional Water Board. Whatever the motivation may be for attempting to tar Freshwater with the same brush used to depict prior owners, the comparison is completely unjustified by the facts or by the record, which, as acknowledged in the letter, the State Board has not reviewed.

Ms. Catherine Kuhlman

July 13, 2010

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The purpose of the financial assurance or financial responsibility obligations in the statutes that require them, moreover, is to ensure that the resources are there, even if the owner or operator is not, to respond to releases to the environment or to operate and maintain closed facilities over the long term in order to prevent and/or detect releases to the environment.<sup>1</sup> That purpose is not served in the present context of the issuance to an industrial discharger of a waste discharge permit that includes effluent discharge limitations which can only be met with the construction of a wastewater treatment plant. If, for some reason, Freshwater were unable in the future to complete the design and construction of the wastewater treatment plant, then, absent a permit modification or other regulatory relief, it would simply have to cease the discharge or find some other way to comply with the effluent limitations. In this instance, a financial assurance instrument, such as a bond or letter of credit, would be irrelevant; unlike, say, a failing landfill or closed hazardous waste facility, there would be no ongoing release or discharge to prevent or treat by using the funds made available through such a financial instrument.<sup>2</sup>

Freshwater interpreted the Regional Water Board's proposed inclusion in the draft CDO of a "financial assurances" requirement as a proposal to include within the compliance schedule a milestone for a demonstration that it had secured the financing necessary to restart the Mill. (Indeed, Freshwater could not have proposed or justified a compliance schedule without making assumptions regarding the timing of receipt of financing.) This interpretation was consistent with the past practice of the Regional Water Board, which has frequently required dischargers named in Cease & Desist Orders to provide information by dates certain on the status of financing needed to comply with discharge requirements.<sup>3</sup>

Freshwater is prepared to make a satisfactory demonstration, by the date set forth in the draft CDO, of the financial arrangements it has made to enable it to restart the mill, arrangements that include an allowance for the cost of the wastewater treatment plant. This appears to be more than

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<sup>1</sup> Freshwater is unaware of any authority for the proposition that financial assurances may be required for other reasons unrelated to regulatory compliance in specific statutorily authorized circumstances. An example of some other, unrelated reason would be to ensure payment of civil penalties, in particular penalties for violations that have not been committed and that may never occur. Financial assurances for such a purpose would be unauthorized, unfair, and, to Freshwater's knowledge, unprecedented. Freshwater understands that the Regional Water Board and the State Board are concerned about the failure of Evergreen to pay the penalties that it agreed to pay, but it would be entirely inappropriate to punish Freshwater for the defaults of prior owners of the Mill.

<sup>2</sup> Thus, even if it were the case that, due to the "volatility" of the pulp market, "a compliance plan that is feasible with today's pulp prices will [not] still be possible in a year or two," as the State Board speculates in its letter, the solution is not to require a guarantee of the financial resources to complete a wastewater treatment plant that would serve a shuttered mill.

<sup>3</sup> Examples include Order Nos. R1-2000-72 and R1-2002-0005 (City of Crescent City); Order No. R1-2004-0097 (Garberville Sanitary District); Order No. R1-2004-0074 (City of Tullake); Order Nos. R1-2003-0020, R1-2004-0102 and R1-2005-0085 (Occidental County Sanitation District); Order No. R1-2005-0087 (Ferndale Wastewater Treatment Facility); and Order Nos. R1-2003-0046 and R1-2005-0034 (City of Rio Dell).

Allen Matkins Leck Gamble Mallory & Natsis LLP  
Attorneys at Law

Ms. Catherine Kuhlman

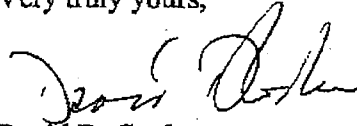
July 13, 2010

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in prior permits were utilized essentially as proxy interim limits for settleable solids and turbidity, which are also measures of the solids content of liquid wastewaters, for two reasons: (a) there is no historical data available for settleable solids and turbidity, and hence it would be impossible at this time to develop separate interim limits for these parameters, and (b) under the circumstances, all of the suspended solids found in the raw water treatment plant discharge, which are the residue that remains after operation of the clarifiers, are settleable solids contained (or "suspended") in a liquid having turbidity values that are indicative of a slurry of collected river sediments and that are so high as to be meaningless. Freshwater acknowledges that the use of a single proxy parameter for two limitations means that an exceedance of the proxy would – at least in the absence of mitigating evidence – be deemed an exceedance of both limitations.

Please ensure that your Board members receive a copy of this response, along with their copy of the State Board's letter.

Very truly yours,



David D. Cooke

DDC

cc: Bob Simpson  
Jim Lund  
Kimberly Niemeyer, Esq.  
Reed Sato